697.5

9

The H. B. SMITH CO.

704 Arch Street

PHILADELPHIA, PA.

697.5

Radiators

WORKS:
Westfield, Mass.

No. 4

NEW YORK OFFICE, 133 CENTRE ST.

RADIATORS

DIRECT — INDIRECT

THE H. B. SMITH CO.

704 ARCH STREET

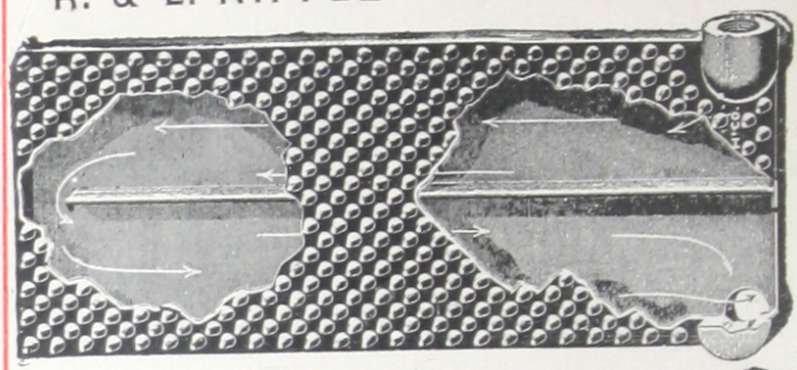
PHILADELPHIA, PA.

BOSTON, MASS.
PROVIDENCE, R. I.
CHICAGO, ILL.
SAN FRANCISCO, CAL.

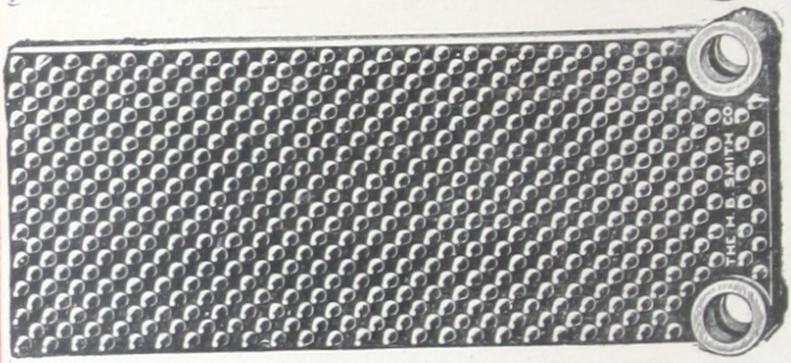
WORKS: WESTFIELD, MASS.

SCHOOL PIN

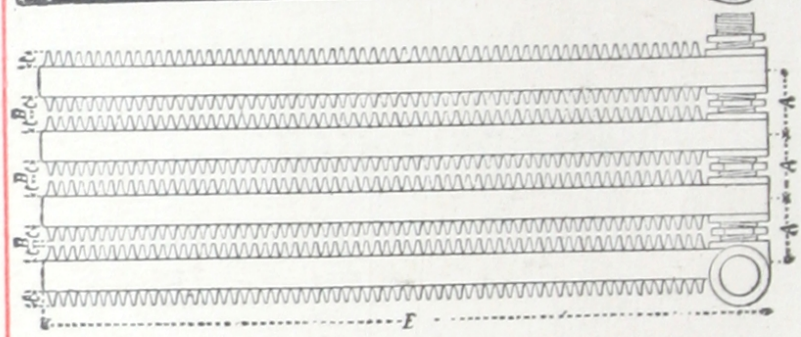
R. & L. NIPPLE STEAM—WATER



HEAD OR DRAIN



INTERMEDIATE



PLAN OF STACK

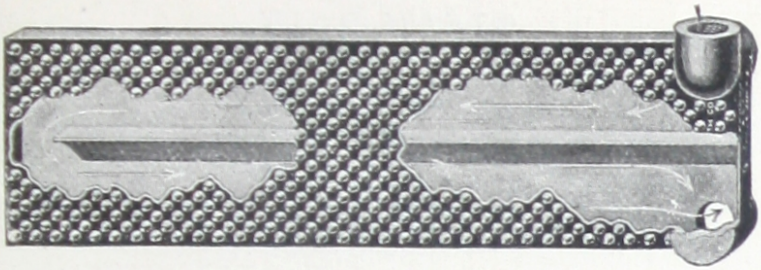
	20 feet	15 feet
Length of Radiators,	36 ins.	36 ins.
Height " " at centre,	14 "	10 "
Height " " at end,	15½ "	11½ "
Thickness "	1½ "	1½ "
Length of Pins,	1 "	1 "
Cen. to cen. of Radiator, (connected)	4 "	4 "
Air space between sections, (when connected)	70 sq. "	70 sq. "
Space between opp. pins (connected)	½ "	½ "
Shipping weight,	115 lbs.	90 lbs.
Connection R. & L. Nipple, top and bottom, one end,	2 in.	2 in.
Supply section has thread L. H.		
Return " " " R. H.		
Sq. ft. surface in each section,	**20**	**15**

BEVELED SLIP NIPPLES are furnished to order in place of threaded nipples. These are held securely in position by heavy bolts extending the length of the stack at each end.

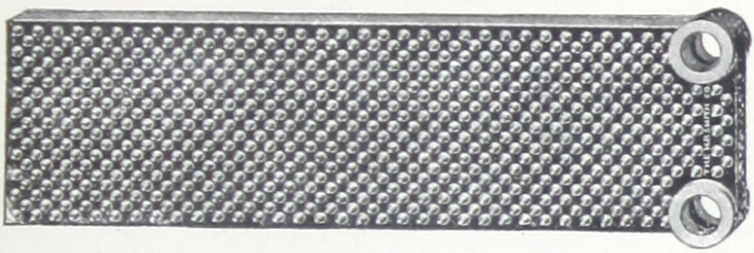
PIN 15 FT. PATTERN

R. & L. NIPPLE (PINS ¾" LONG)

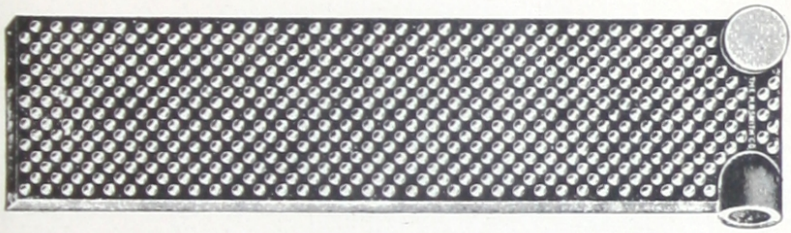
STEAM—WATER



HEAD SECTION. SHOWING INTERIOR



INTERMEDIATE SECTION



DRAIN SECTION

Length of Radiators		36 ins.
Height " "	at centre	10 "
Height " "	at end	11½ "
Thickness "		1½ "
Length of Pins		¾ "
Centre to centre of Radiator (when connected)		3¼ "
Air space between sections (when connected)		60 sq. "
Space between opposite pins (when connected)		¼ "
Shipping Weight		90 lbs.
Square ft. surface in each section,		**15**

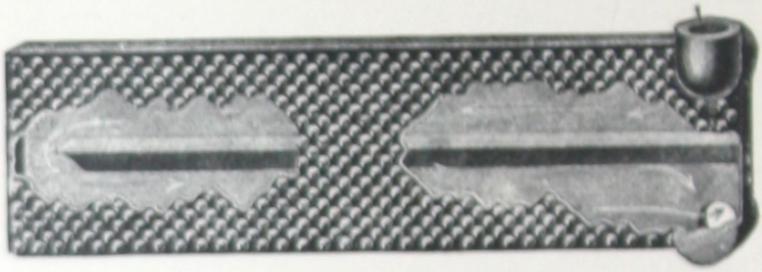
Water or Steam—2-inch, R. & L. Nipple connection top and bottom one end, (15 foot pattern.)

BEVELED SLIP NIPPLES are furnished to order in place of threaded Nipples. These are held securely in position by heavy bolts extending the length of stack at each end.

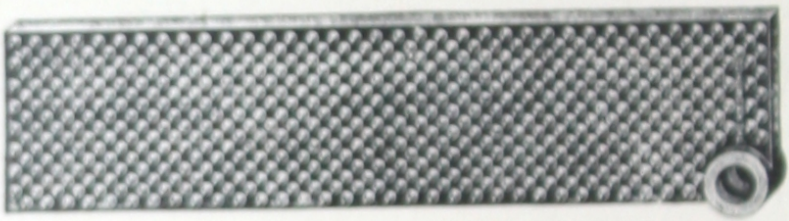
PIN 12 FT. PATTERN

R. & L. NIPPLE (PINS ¾" LONG)

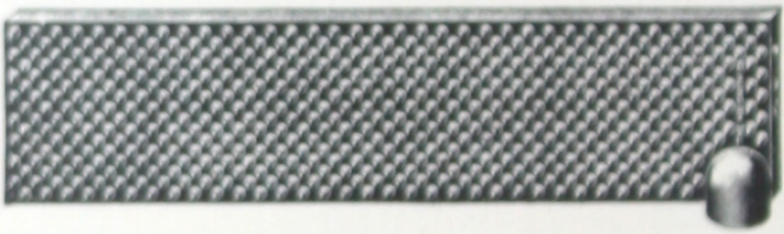
STEAM ONLY



HEAD SECTION



INTERMEDIATE SECTION



DRAIN SECTION

Total Length	36	inches
" Height (extreme)	9	"
Centre to centre connected	3¼	"
Length of Pins	¾	"
Space between Pins	¼	"
Shipping weight	72	lbs.

Connection R. & L. Nipple, 2 inch, at bottom one end

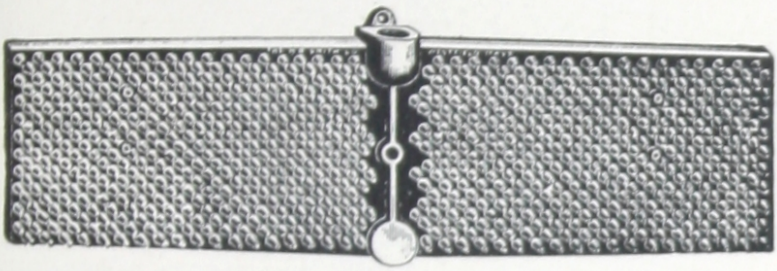
Square ft. surface in each section, ... **12**

Tapping, 1¼"x1¼". Air Valve, ⅜".

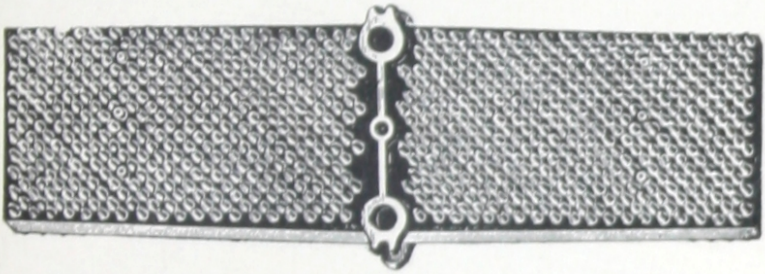
FLANGE PIN

TEN (10) INCH

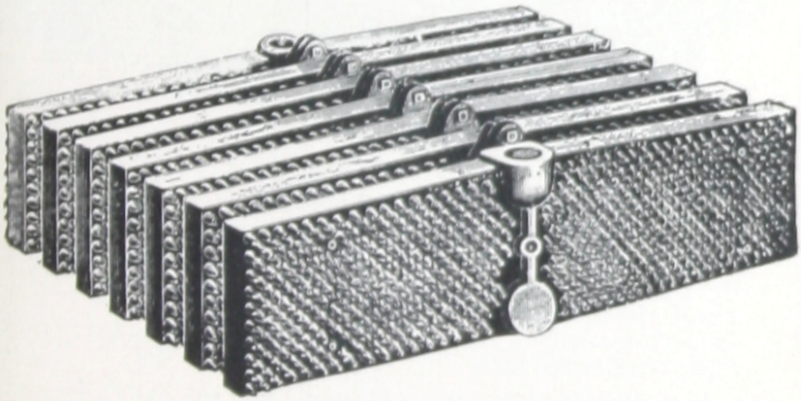
Supply or Drain



Intermediate



Stack of seven radiators



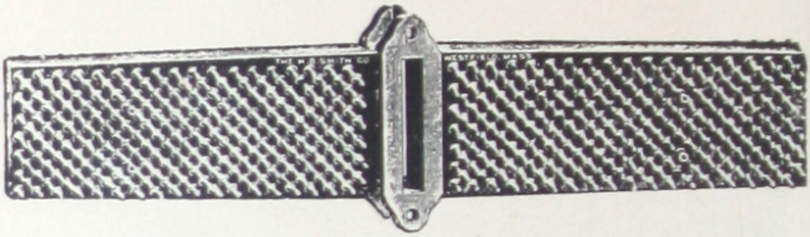
When erected, letter cast in section is at top of stack.

Number of pins on each radiator	-	1500
Total length	"	40½ inches
Total height	"	10 "
Heighth of flanges	"	14½ "
Total thickness	"	3⅛ "
Shipping weight		95 lbs.
Square feet surface		**15**

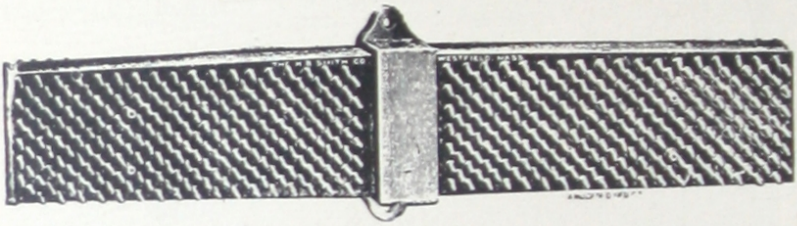
Tapping—Supply 1½", return 1½", air valve ⅜"

GOLD'S PIN

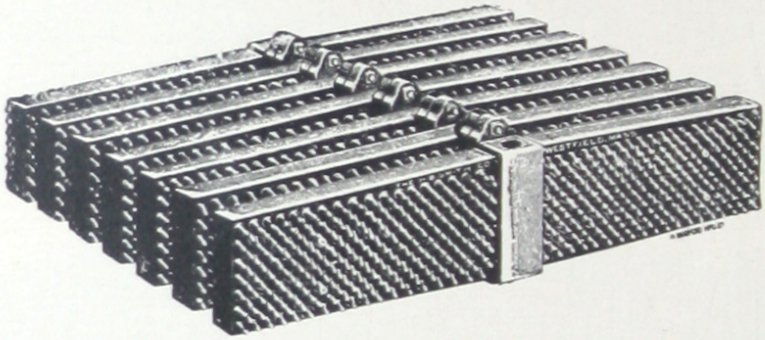
Intermediate



Supply and Drain



Stack of seven radiators.



Number of pins on each radiator	936
Total length	40½ inches
Total height	7¼ "
Height at flanges	13 "
Total thickness	3¼ "
Shipping weight	60 lbs.
Square feet surface	**10**

Tapping—Supply 1¼", return 1¼", air valve ⅜"
351 cu. in steam space in each radiator.
Bolts are ½" x $2\frac{11}{16}$".

GOLD'S INDIRECT PIN

(Old style for repairs)

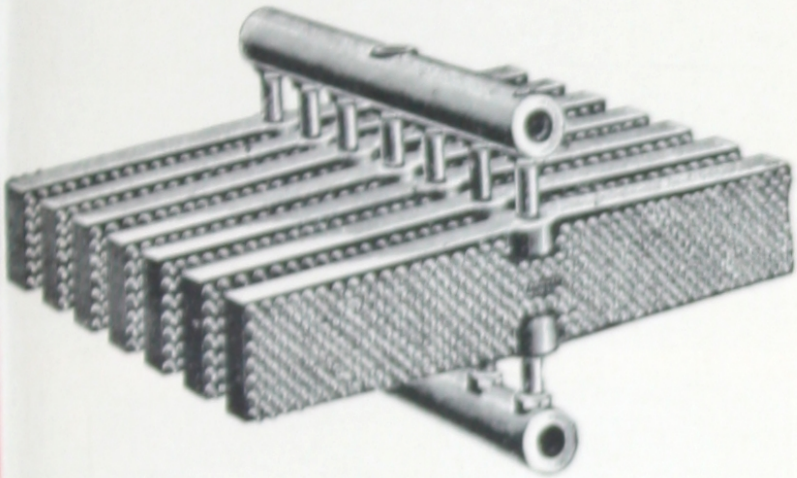
Two patterns of this radiator can be furnished for repairs—measurements as above, except following.

Steam	Water
Height flanges 10½ ins.	Height flanges 11½ ins.
Height radiator 6½ "	Height radiator 6½ "
Number pins 912	Number pins 912

DRUM PIN

TEN (10) INCH

FOR WATER CIRCULATION



Number pins on each radiator	1586
Total length "	40½ inches
Total height at ends of "	10 "
" " at centre of "	11¼ "
Distance from sections to outside of drum (in stack)	6⅛ "
Distance centre to centre of nipples	3⅛ "
Outside diameter of drums	3 7/16 "
Size of nipples	1 "
Shipping weight	95 lbs.
Square feet surface	**16**

TAPPING

Supply drum	1½" each end 1½" and ⅜" top
Return drum	1½" each end 1½" and ⅜" underneath

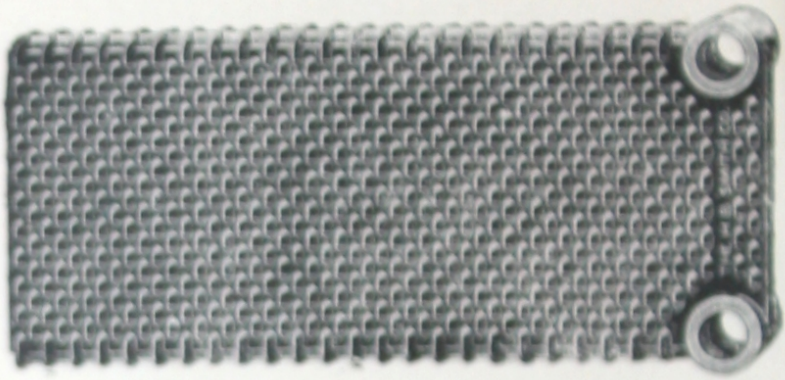
In ordering state number to be used in stack

A 6 inch pattern similar to above can be furnished. Length 40½". Height over all 21¼". Centre to centre 3⅛". Square feet surface 11.

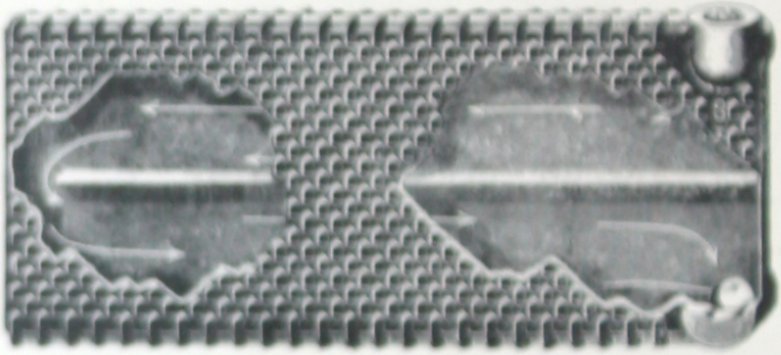
WHITTIER INDIRECT RADIATORS

STEAM—WATER

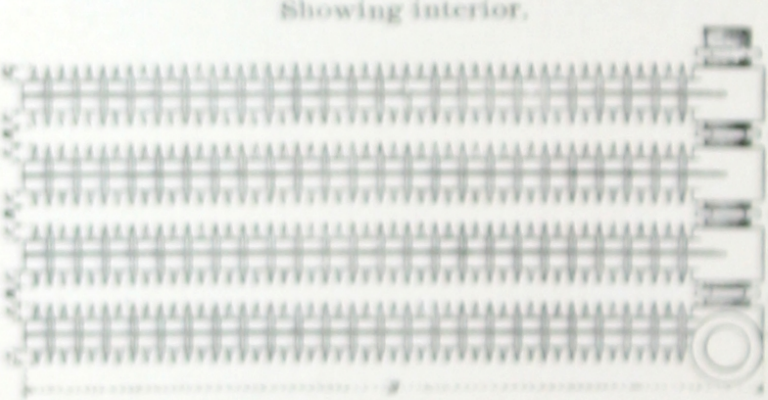
SPECIAL—MADE TO ORDER ONLY



Intermediate section.



Showing interior.



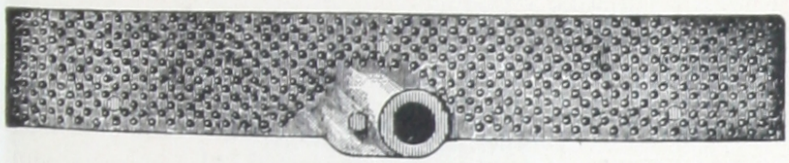
Plan.

Length of Radiators,	36 in.	36 in.
Height " " at centre,	15½ "	11½ "
Thickness "	3 "	3 "
Centre to centre of Radiators (connected),	3½ "	3½ "
Air space between (points ¼") sec. "	70 sq. "	70 sq. "
Number ex. surface points 1230; length	¾ "	¾ "
Connection R. & L. Nipple, top and bottom, one end,	2 "	2 "
Shipping weight,	125 lbs.	85 lbs.
Square feet surface in each section	**20**	**15**

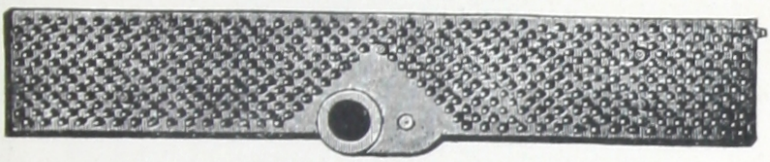
R. & L. Nipple Pattern

CENTRE CONNECTIONS

FOR STEAM



RIGHT HAND SECTION.



LEFT HAND SECTION.

Number pins on each radiator, . .	956
Total length " . .	40½ inches
Total height " . .	7½ "
Total thickness " . .	3 "
Space when in position between radiators	¼ to ⅛ "
Shipping weight	60 lbs.
Square feet surface	**11**

Tapping—Supply 1¼", return ¾". air valve ⅜"

(EXTENDED NIPPLE SURFACE)

STEAM—WATER

Flange joint connections, opposite ends, giving continuous circulation from supply to return when connected in stacks.

Length	45½ ins.	Length	24 ins
Width	7½ "	Width	7½ "
Thickness	3½ "	Thickness	3½ "
Width flanges	10 "	Width flanges	10 "
Square ft. surface	**12**	**Square ft. surface**	**6**

The UTICA is also made with one screw nipple connection at end for steam.

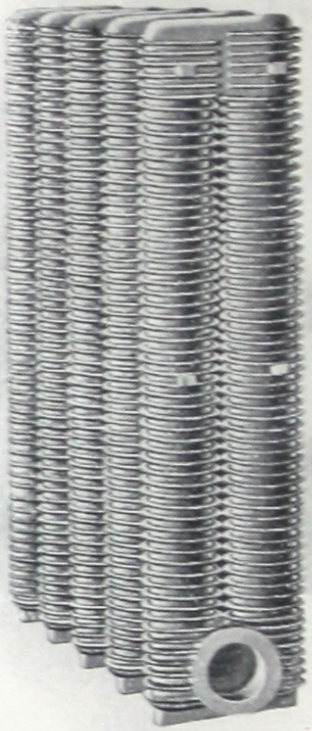
Square feet surface, 12

"AERAL"

R. & L. NIPPLE CONNECTIONS

FOR

FAN SYSTEM OF WARMING



POSITION OF STACK, VERTICAL

PERFECT DRAINAGE IS OBTAINED.

Height of Radiator	3 feet 1 inch
Width " "	9 inches
Thickness of "	3¼ "
Size of Nipple,	3 "
Air Valve Opening,	⅜ "

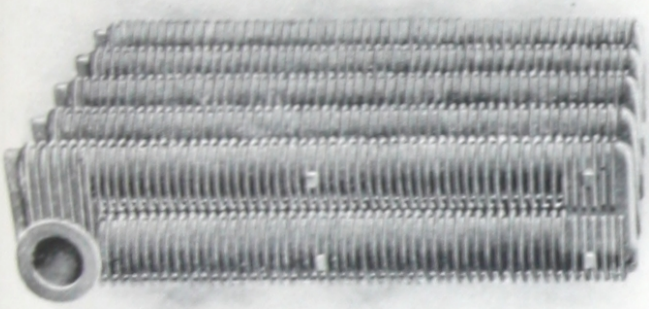
Distance, centre to centre, 4½" or 4¼" in position.

Square feet surface, ... 15

"AERAL"

R. & L. NIPPLE CONNECTIONS

FOR INDIRECT WARMING

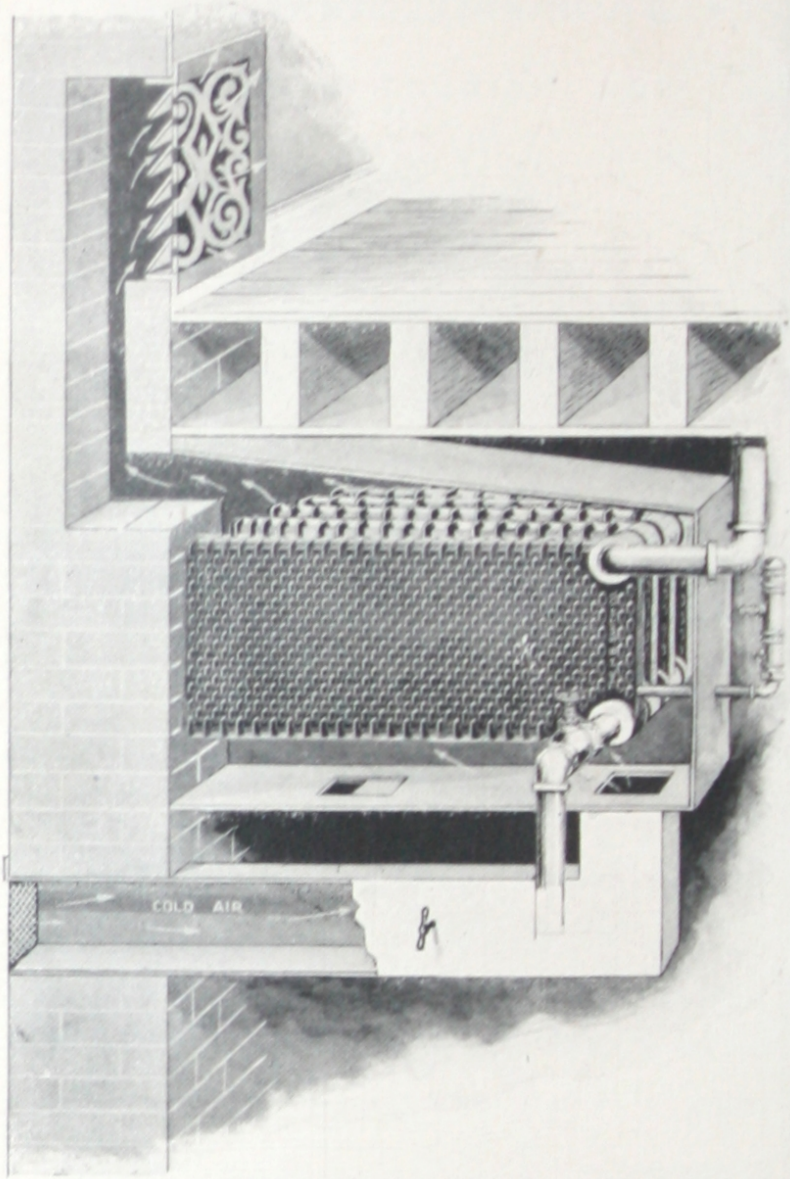


POSITION OF STACK—HORIZONTAL

Length of Radiator,	3 feet 1 inch
Width " "	9 inches
Thickness "	3¼ "
Size of Nipple,	2 "
Air Valve Opening,	⅜ "
Distance centre to centre,	4½ "
Square feet surface,	**15**

VENTILATING

Stack of indirect radiators with fresh air duct and warm air supply to room. Registers are placed in floor or wall.



It is important that a supply of fresh air be provided to replace that which is vitiated by breathing, exhalation, illumination and other ways.

An amount of fresh air varying from 1200 to 2000 cubic feet per hour, according to conditions, should be provided for each adult in a carefully constructed *steam* or *water* warming apparatus.

In indirect warming (with equal temperature of the *steam* or *water*) with properly constructed ducts, air can be passed through registers at a velocity of 5 feet or more per second. The delivery area of a register is

two-thirds its total area. An adequate supply of fresh air warmed by *one* large stack of indirect radiators, may be sufficient for a dwelling containing a number of rooms where the construction is such as to admit of a free circulation of air through the rooms, and an outlet as provided. The movement of heated air in flues is caused by the difference in weight between equal volumes of air at different temperatures. The cold air forces the warm air upward with a force proportionate to this difference in height between the two columns of an equal weight and unequal heights, because of a difference in temperature.

Ventilating flues are necessary for the exit of foul air, and to permit the entrance of fresh air from indirect stacks.

These flues may be in the inside of walls. Chimneys with an open fire-place make good vent flues.

Ventilation for large buildings should be planned by engineers of skill and experience.

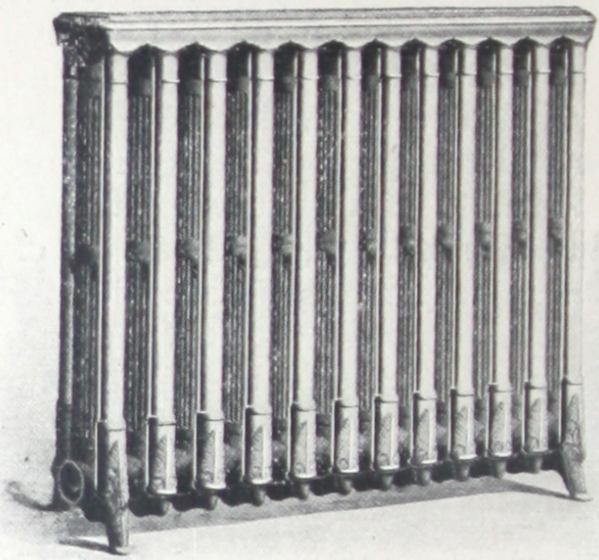
The best hot air furnaces will remain gas tight but a short time and there is then added to the vitiated air, carbonic oxide gas and coal dust, which is unquestionably detrimental to the health of those who breathe it. In a furnace, the surface heating the air being in direct contact with the fire, becomes *intensely* heated. The red hot iron absorbs the oxygen moisture, and deteriorizes the air.

Owing to the lower temperature of *steam* or *hot water*, the air is not vitiated as in heating by *hot air*, and less ventilation is needed.

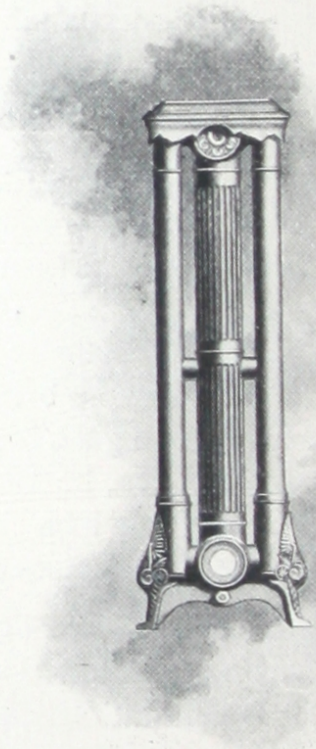
No method of warming is so well adapted to perfect ventilation as *steam or hot water*.

UNION O. B.

STEAM—WATER



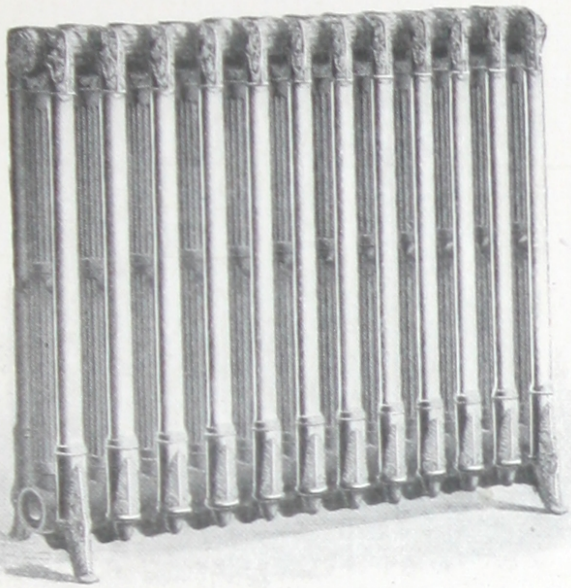
WIDTH AT FEET, 11 IN. LENGTH PER SECTION, 3 IN.
WIDTH OF SECTION, 8 IN.



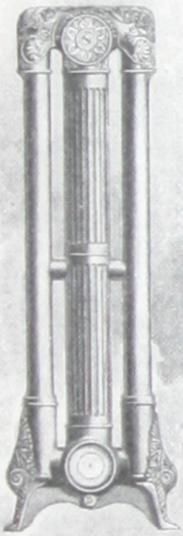
Marble Tops furnished if desired

ROYAL UNION

STEAM—WATER



WIDTH AT FEET, 11 IN. LENGTH PER SECTION, 3 IN.
WIDTH OF SECTION, 8 IN.
EXTENSION LEGS, 1½″, 3″, 6″.

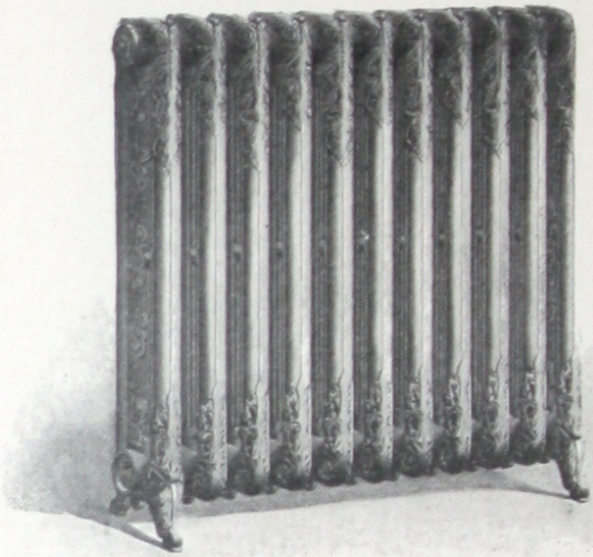


OLD PATTERN

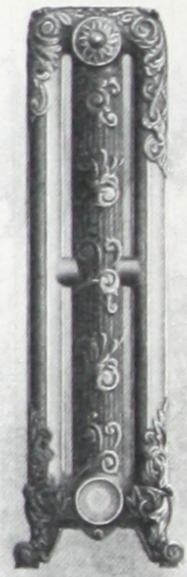
FOR THE NEW DESIGN SEE 1903 LIST

IMPERIAL UNION

STEAM—WATER



WIDTH AT FEET, 11 IN. LENGTH PER SECTION, 3¼ IN.
WITH SPECIAL LEGS, 9 IN. WIDTH OF SECTION, 9 IN.
EXTENSION LEGS, 1½", 2", 3", 3½", 4", 4½", 6", 6½".



WIDE LEG

For illustration Special 9" Leg, page 65.

IMPERIAL UNION

SPECIAL NARROW LEG, 9″ WIDE

For Imperial Radiators, page 64.

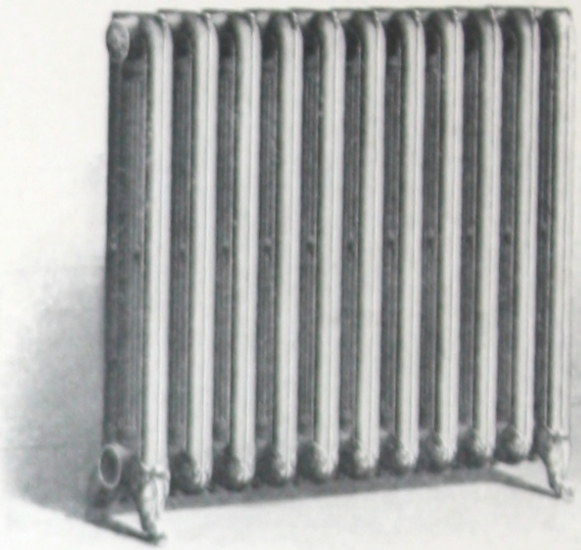
CORONET

SPECIAL NARROW LEG, 5″ WIDE

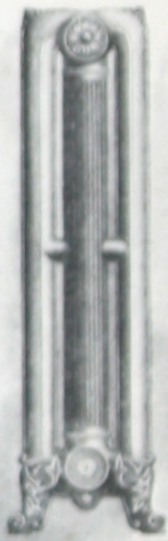
For Coronet Radiators, page 67.

CHAMPION UNION

STEAM—WATER



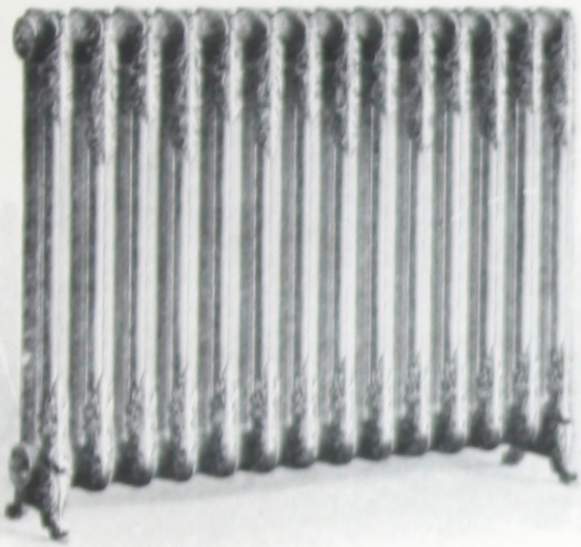
WIDTH AT FEET, 11 IN. LENGTH PER SECTION, 3¼ IN.
WIDTH OF SECTION, 9 IN.



Made to order only for repairs.
See Princess Radiator.

CORONET

STEAM—WATER



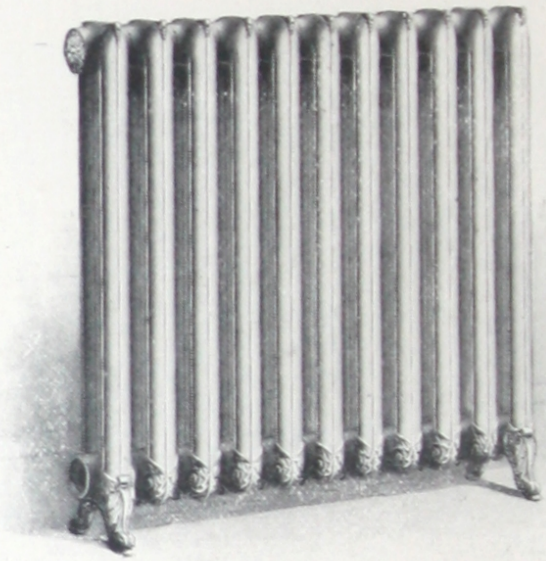
WIDTH AT FEET, 7¼ IN. LENGTH PER SECTION, 3 IN.
WIDTH SPECIAL LEGS, 5 IN. WIDTH OF SECTION, 5 IN.

EXTENSION LEGS OR WALL BRACKET ATTACHMENTS FURNISHED.

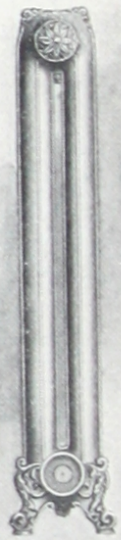
For illustration Special 5" Leg, page 65.

CROWN

STEAM—WATER



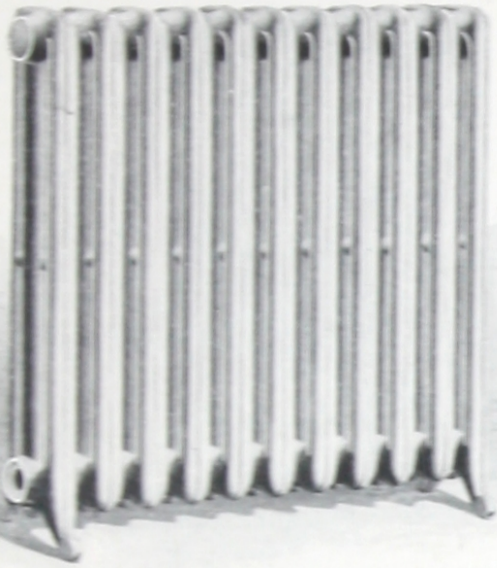
WIDTH AT FEET, 7¼ IN. LENGTH PER SECTION, 3 IN.
WITH SPECIAL LEGS 5 IN. WIDTH OF SECTION, 5 IN.



Made to order only for repairs.
See Diadem Radiator.

PRINCESS UNION

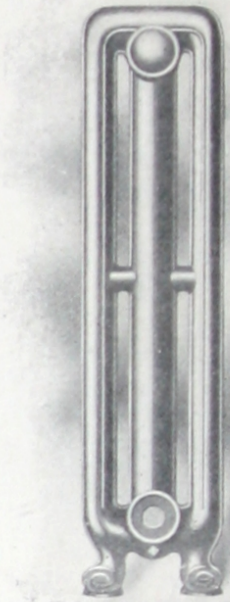
STEAM—WATER



NEW PATTERN—WIDTH AT FEET, 9 IN.
OLD PATTERN—WIDTH AT FEET, 10¾ IN.
LENGTH PER SEC., 3¼ IN. WIDTH OF SEC., 9 IN.
EXTENSION LEGS FURNISHED TO ORDER.

For illustration Special 9" Leg, page 70.

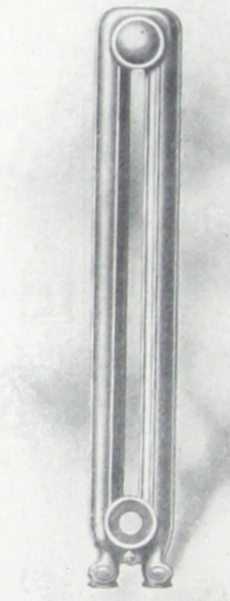
PRINCESS UNION



SPECIAL NARROW LEG, EXTREME WIDTH 9″

See page 69 for Princess Union Radiators.

DIADEM

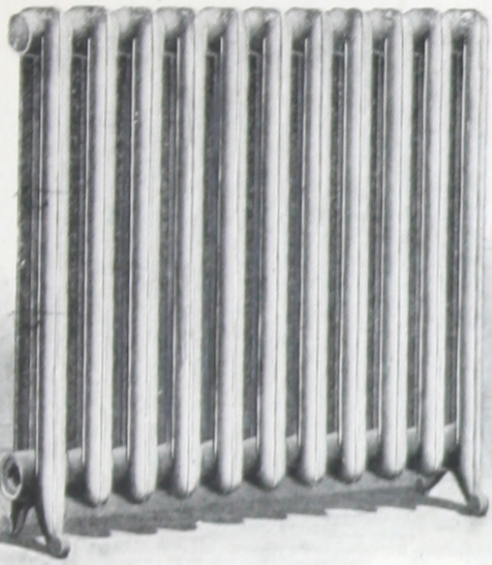


SPECIAL NARROW LEG, EXTREME WIDTH 5″

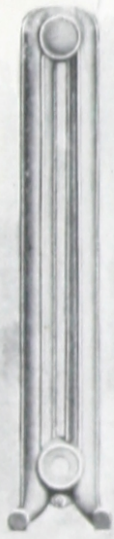
See page 71 for Diadem Radiators.

DIADEM

STEAM—WATER



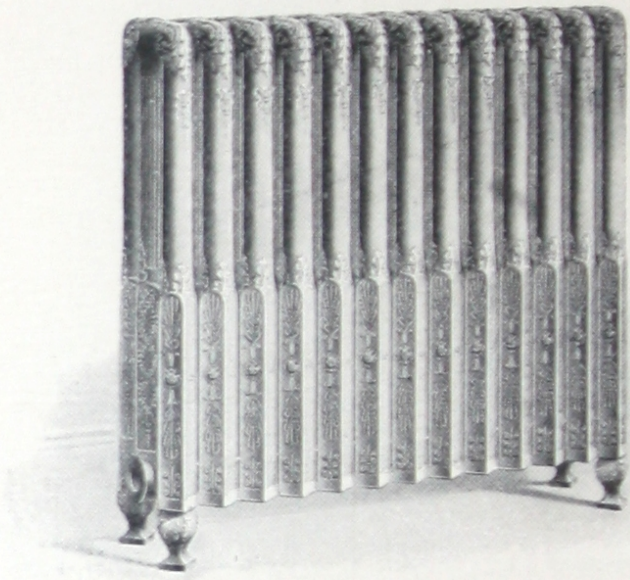
WIDTH AT FEET 7 IN. LENGTH PER SECTION, 3 IN.
With Special Legs 5 In. WIDTH OF SECTION, 5 IN.
45 IN. HIGH, HAS 4½ FEET IN EACH SECTION.
EXTENSION LEGS OR WALL BRACKET
ATTACHMENTS FURNISHED.



For illustration Special 5" Leg, page 70.

SOVEREIGN

STEAM—WATER



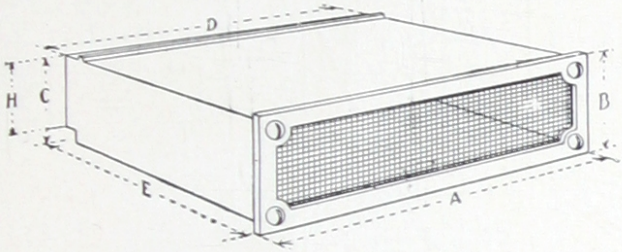
WIDTH AT FEET, 8⅝ IN. LENGTH PER SECTION, 2 11/16 IN.

WIDTH OF SECTION, 8¾ IN.

Prices with Semi-Direct Base on application.

AIR INLET FRAMES

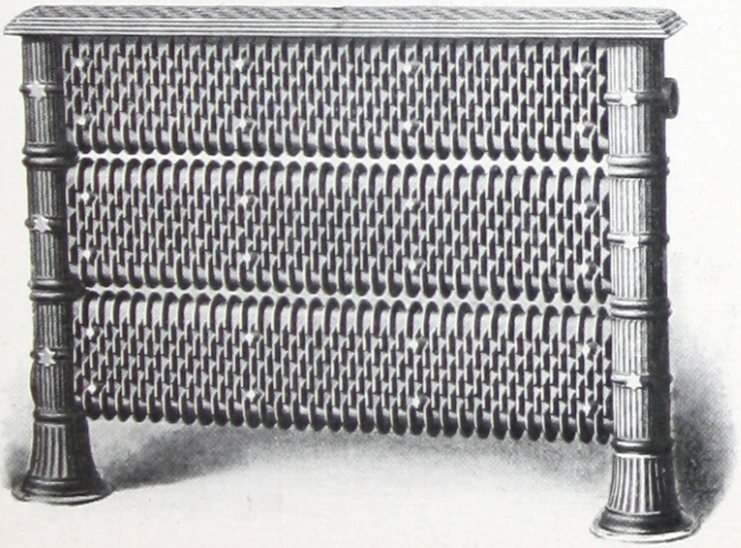
WITH WIRE SCREEN FACING
WALL BOXES
FOR SOVEREIGN RADIATORS



	No. 0	No. 1	No. 2	No. 3	No. 4
Length at outside wall, *D*	12½″	14½″	14½″	17½″	17½″
Depth ext'ding in wall, *E*	9″	9″	9″	9″	9″
Width . . . . . *C*	2⅜″	2⅜″	4⅞″	2⅜″	4⅞″

WHITTIER

EXTENDED SURFACE BAR
HIGH OR LOW PRESSURE
(Screw nipple connections.)



WHITTIER RADIATOR SIZES

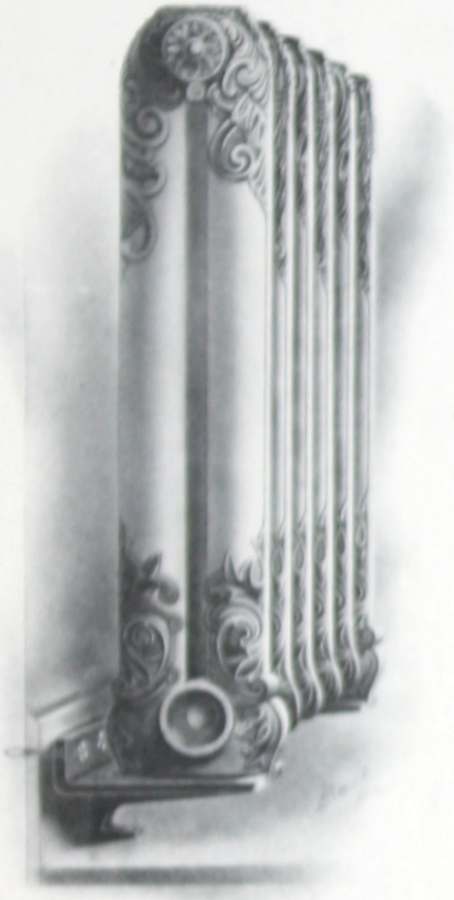
Number of Bars High	Total Height of Radiator	6 Feet Long Bars Sq. Ft. of Radiating Surface	5 Feet Long Bars Sq. Ft. of Radiating Surface	4 Feet Long Bars Sq. Ft. of Radiating Surface	3½ Feet Long Bars Sq. Ft. of Radiating Surface
1 Bar	1 foot, 2 inches	25 feet	21 feet	17 feet	14½ feet,
2 Bars	1 " 10¼ "	50 "	42 "	34 "	29 "
3 "	2 feet, 6¼ "	75 "	63 "	51 "	43½ "
4 "	3 " 2½ "	100 "	84 "	68 "	58 "
5 "	3 " 10½ "	125 "	105 "	85 "	72½ "
6 "	4 " 6½ "	150 "	126 "	102 "	87 "
Length at Floor		6 " 2½ inches	5 " 2½ inches	4 " 2½ inches	3 " 9 inches
Width at Floor		6½ "	6½ "	6½ "	6½ "

Number of Bars High	Total Height of Radiator	3 Feet Long Bars Sq. Ft. of Radiating Surface	2½ Feet Long Bars Sq. Ft. of Radiating Surface	2 Feet Long Bars Sq. Ft. of Radiating Surface	1½ Feet Long Bars Sq. Ft. of Radiating Surface
1 Bar	1 foot, 2 inches	12½ feet	10½ feet	8½ feet	6½ feet
2 Bars	1 " 10¼ "	25 "	21 "	17 "	13 "
3 "	2 feet, 6¼ "	37½ "	31½ "	25½ "	19½ "
4 "	3 " 2½ "	50 "	42 "	34 "	26 "
5 "	3 " 10½ "	62½ "	52½ "	42½ "	32½ "
6 "	4 " 6½ "	75 "	63 "	51 "	39 "
Length at Floor		3 " 2½ inches	2 " 9 inches	2 " 2½ inches	1 " 9 inches
Width at Floor		6½ "	6½ "	6½ "	6½ "

All the heights given have the Regular Pattern Leg, 4¾ inches high. Special legs can be furnished. Increasing height 2¾ inch or 6¾ inches and reducing height 1¾ inch or 2¾ inches.

THE H. B. SMITH CO.

RADIATOR BRACKETS FOR CORONET AND DIADEM



	HEIGHT	LENGTH	WIDTH
Bracket	3½ In.	6⅜ In.	2 In.

Distance floor to center of tapping, see pp. 77.

A Bracket without the floor flange rest, is made to be attached to wall by expansion bolts and can be raised to any desired height above floor.

For Expansion Bolts, holes are ⅝ inch, to order
For Screws, holes are . ⅜ inch, to order

All the heights given have the Regular Pattern Leg, 4¾ inches high. Special legs can be furnished. Increasing height 2¾ inch or 6¾ inches and reducing height 1¾ inch or 2¾ inches.

APPROXIMATE DISTANCE FROM FLOOR TO CENTER OF TOP OPENINGS

RADIATORS TAPPED TOP AND BOTTOM SAME END OR TOP AND BOTTOM OPPOSITE ENDS

IMPERIAL UNION	PRINCESS UNION
45″ High 43 13-16″	45″ High 42 13-16″
37″ " 34 9-16″	37″ " 34 3-4″
31″ " 28 13-16″	31″ " 28 15-16″
25″ " 22 3-4″	25″ " 22 7-8″
19″ " 17 1-16″	19″ " 16 15-16″

CORONET	DIADEM
45″ High 42 3-8″	45″ High 42 1-4″
37″ " 34 1-8″	37″ " 33 15-16″
31″ " 28 1-8″	31″ " 28 1-8″
25″ " 22 1-4″	25″ " 22 1-4″
19″ " 16 5-16″	19″ " 16 1-4″

UNION AND ROYAL UNION*	SOVEREIGN UNION
37″ High 35 1-4″	37″ High 35 3-8″
33″ " 31 1-4″	41″ " 29 9-16″
29″ " 27 1-4″	25″ " 23 7-8″
25″ " 23″	
21″ " 19 1-4″	
17″ " 55 5-16″	

*Old pattern, pp. 62 and 63.

SOVEREIGN UNION

DIRECT AND SEMI-DIRECT

No. of Sections	Height 37″	Height 31″	Height 25″	Height 19″	Total Length Ft.	Total Length In.
	Ft.	Ft.	Ft.		Ft.	In.
2	12	10	8	. .	0	5¼
3	18	15	12	. .	0	8 1/16
4	24	20	16	. .	0	10¾
5	30	25	20		1	1 1/16
6	36	30	24	. .	1	4⅛
7	42	35	28	. .	1	6 3/16
8	48	40	32	. .	1	9½
9	54	45	36	. .	2	0 5/16
10	60	50	40	. .	2	2⅝
11	66	55	44	. .	2	5 3/16
12	72	60	48	. .	2	8¼
13	78	65	52	. .	2	10 13/16
14	84	70	56	. .	3	1⅜
15	90	75	60	. .	3	4 5/16
16	96	80	64	. .	3	7
17	102	85	68	. .	3	9 11/16
18	108	90	72	. .	4	0⅜
19	114	95	76	. .	4	3 5/16
20	120	100	80	. .	4	5¾
21	126	105	84	. .	4	8 7/16
22	132	110	88	. .	4	11⅛
23	138	115	92	. .	5	1 13/16
24	144	120	96	. .	5	4½
25	150	125	100	. .	5	7 5/16
26	156	130	104	. .	5	9⅞
27	162	135	108	. .	6	0 5/16
28	168	140	112	. .	6	3¼
29	174	145	116	. .	6	5 13/16
30	180	150	120	. .	6	8⅜

TAPPING

Two-Pipe Work (Regular)

Steam Radiators of 50 square feet and less, 1 inch x ¼ inch R. H.

Steam Radiators of more than 50 square feet, 1¼ inch x 1 inch R. H.

Air Valve, ⅜ inch R. H.

One-Pipe Work.

Steam Radiators of 30 feet and less, 1 inch R. H.

Steam Radiators of more than 30 feet and smaller than 60 feet, 1¼ inch R. H.

Steam Radiators of more than 60 feet, 1½ inch R. H.

Air Valve, ⅜ inch R. H.

Water Radiators of 50 square feet and less, 1 inch x 1 inch R. H.

Water Radiators of more than 50 square feet, 1¼ inch x 1¼ inch R. H.

*Air Valve, ⅜ inch at top R. H.
Distance floor to centre of opening 5″

ROYAL UNION, '98
AND
UNION O. B.
DIRECT

No. of Sections	Height 37″	33″	29″	25″	21″	17″	Total Length Ft.	In
	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.		
2	10	9	7½	6½	5½	4½	0	6
3	15	13½	11¼	9¾	8¼	6¾	0	9
4	20	18	15	13	11	9	1	0
5	25	22½	18¾	16¼	13¾	11¼	1	3
6	30	27	22½	19½	16½	13½	1	6
7	35	31½	26¼	22¾	19¼	15¾	1	9
8	40	36	30	26	22	18	2	0
9	45	40½	33¾	29¼	24¾	20¼	2	3
10	50	45	37½	32½	27½	22½	2	6
11	55	49½	41¼	35¾	30¼	24¾	2	9
12	60	54	45	39	33	27	3	0
13	65	58½	48¾	42¼	35¾	29¼	3	3
14	70	63	52½	45½	38½	31½	3	6
15	75	67½	56¼	48¾	41¼	33¾	3	9
16	80	72	60	52	44	36	4	0
17	85	76½	63¾	55¼	46¾	38¼	4	3
18	90	81	67½	58½	49½	40½	4	6
19	95	85½	71¼	61¾	52¼	42¾	4	9
20	100	90	75	65	55	45	5	0
21	105	94½	78¾	68¼	57¾	47¼	5	3
22	110	99	82½	71½	60½	49½	5	6
23	115	103½	86¼	74¾	63¼	51¾	5	9
24	120	108	90	78	66	54	6	0
25	125	112½	93¾	81¼	68¾	56¼	6	3
26	130	117	97½	84½	71½	58½	6	6
27	135	121½	101¼	87¼	74¼	60¾	6	9
28	140	126	105	91	77	63	7	0
29	145	130½	108¾	94¼	79¾	65¼	7	3
30	150	135	112½	97½	82½	67½	7	6

TAPPING

REGULAR

Water, 50 feet and smaller 1 inch x 1 inch; above 50 feet, 1¼ inch x 1¼ inch.

Steam Two Pipe, 50 feet and smaller 1 inch x ¾ inch; above 50 feet, 1¼ inch x 1 inch.

Steam One Pipe, 30 feet and smaller 1 inch; above 30 feet, 1¼ inch; above 60 feet, 1½ inch.

Air Valve, ⅛ inch.

Extension Legs 1½, 3, and 6 inches increase in height of radiator to order.

When Water Radiators are used for steam, place air valve at return end near base.

Radiators tapped top and bottom (water) are special. Radiators tapped on under side (steam or water) are special.

IMPERIAL CHAMPION AND PRINCESS

DIRECT

No. of Sections	Height 45″	37″	31″	25″	19″	Total Length	
	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	In.
2	16	13	11	9	7	0	6½
3	24	19½	16½	13½	10½	0	9¾
4	32	26	22	18	14	1	1
5	40	32½	27½	22½	17½	1	4¼
6	48	39	33	27	21	1	7½
7	56	45½	38½	31½	24½	1	10¾
8	64	52	44	36	28	2	2
9	72	58½	49½	40½	31½	2	5¼
10	80	65	55	45	35	2	8½
11	88	71½	60½	49½	38½	2	11¾
12	96	78	66	54	42	3	3
13	104	84½	71½	58½	45½	3	6¼
14	112	91	77	63	49	3	9½
15	120	97½	82½	67½	52½	4	¾
16	128	104	88	72	56	4	4
17	136	110½	93½	76½	59½	4	7¼
18	144	117	99	81	63	4	10½
19	152	123½	104½	85½	66½	5	1¾
20	160	130	110	90	70	5	5
21	168	136½	115½	94½	73½	5	8¼
22	176	143	121	99	77	5	11½
23	184	149½	126½	103½	80½	6	2¾
24	192	156	132	108	84	6	6
25	200	162½	137½	112½	87½	6	9¼
26	208	169	143	117	91	7	½
27	216	175½	148½	121½	94½	7	3¾
28	224	182	154	126	98	7	7
29	232	188½	159½	130½	101½	7	10¼
30	240	195	165	135	105	8	1½

TAPPING

REGULAR

Water, 50 feet and smaller 1 inch x 1 inch; above 50 feet, 1¼ inch x 1¼ inch.

Steam Two Pipe, 50 feet and smaller 1 inch x ¾ inch; above 50 feet, 1¼ inch x 1 inch.

Steam One Pipe, 30 feet and smaller 1 inch; above 30 feet, 1¼ inch; above 60 feet, 1½ inch.

Air Valve, ⅛ inch.

Extension Legs, Imperial, 1½″, 2″, 3″, 3½″, 4″, 4½″, 6″, 6½″ increase in height of radiator to order.

Extension Legs, Princess, to order. Specify height required.

When water radiators are used for steam, place air valve at return end near base.

Radiators tapped top and bottom (water) are special. Radiators tapped on under side (steam or water) are special.

CORONET CROWN AND DIADEM

DIRECT

No. of Sections	Height 45″	37″	31″	25″	19″	Total Length	
	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	In.
2	9	7	6	5	4	0	6
3	13½	10½	9	7½	6	0	9
4	18	14	12	10	8	1	0
5	22½	17½	15	12½	10	1	3
6	27	21	18	15	12	1	6
7	31½	24½	21	17½	14	1	9
8	36	28	24	20	16	2	0
9	40½	31½	27	22½	18	2	3
10	45	35	30	25	20	2	6
11	49½	38½	33	27½	22	2	9
12	54	42	36	30	24	3	0
13	58½	45½	39	32½	26	3	3
14	63	49	42	35	28	3	6
15	67½	52½	45	37½	30	3	9
16	72	56	48	40	32	4	0
17	76½	59½	51	42½	34	4	3
18	81	63	54	45	36	4	6
19	85½	66½	57	47½	38	4	9
20	90	70	60	50	40	5	0
21	94½	73½	63	52½	42	5	3
22	99	77	66	55	44	5	6
23	103½	80½	69	57½	46	5	9
24	108	84	72	60	48	6	0
25	112½	87½	75	62½	50	6	3
26	117	91	78	65	52	6	6
27	121½	94½	81	67½	54	6	9
28	126	98	84	70	56	7	0
29	132½	101½	87	72½	58	7	3
30	135	105	90	75	60	7	6

TAPPING

REGULAR

Water, 50 feet and smaller 1 inch x 1 inch ; above 50 feet, 1¼ inch x 1¼ inch.

Steam Two Pipe, 50 feet and smaller 1 inch x ¾ inch ; above 50 feet, 1¼ inch x 1 inch.

Steam One Pipe, 30 feet and smaller 1 inch ; above 30 feet, 1¼ inch ; above 60 feet, 1½ inch.

Air Valve, ⅛ inch.

Wall Bracket Attachments and Extension Legs furnished.

When water radiators are used for steam, place air valve at return end near base.

Radiators tapped top and bottom (water) are special. Radiators tapped on under side (steam or water) are special.

STEAM AND WATER RADIATORS

DISTANCE FROM FLOOR TO CENTRE IN TAPPINGS FOR WATER AND ONE-PIPE STEAM.

Size of Tappings.	Union, Royal Union, 37″ and nearly all other heights.	Diadem Coronet Crown 45″, 37″ 31″, 25″ 19″.	Sovereign 37″ 31″ 25″.	Imperial Union 45″, 37″, 31″, 25″.		Princess Union 45″, 37″ 31″, 25″ 19″.
	Dis.	Dis.	Dis.	Dis.		Dis.
					19″	
2 ″	4 ″	$4\frac{3}{16}$″	5″	$4\frac{5}{8}$″	$4\frac{1}{4}$″	$4\frac{11}{16}$″
1½″	$3\frac{7}{8}$″	$4\frac{1}{16}$″	5″	4½″	$4\frac{5}{8}$″	$4\frac{9}{16}$″
1¼″	$3\frac{1}{4}$″	$3\frac{15}{16}$″	5″	$4\frac{3}{8}$″	4½″	$4\frac{7}{16}$″
1 ″	$3\frac{5}{8}$″	$3\frac{13}{16}$″	5″	4¼″	$4\frac{3}{8}$″	$4\frac{5}{16}$″
¾″	3½″	$3\frac{11}{16}$″	5″	$4\frac{1}{8}$″	4¼″	$4\frac{3}{16}$″
½″	$3\frac{3}{8}$″	$3\frac{9}{16}$″	5″	4 ″	$4\frac{1}{8}$″	$4\frac{1}{16}$″

Double Tappings in Base, in same end to order.

Royal, Imperial, Princess, to centre of supply, 4½″.

Diadem, Coronet, Crown, to centre of supply, 3″ from floor.

Extension Legs, Imperial, are 1½″, 2″, 3″, 3½″, 4″, 4½″, 6″, 6½″ increase in height.

Extension Legs, Royal, are 1½″, 3″, 6″ increase.

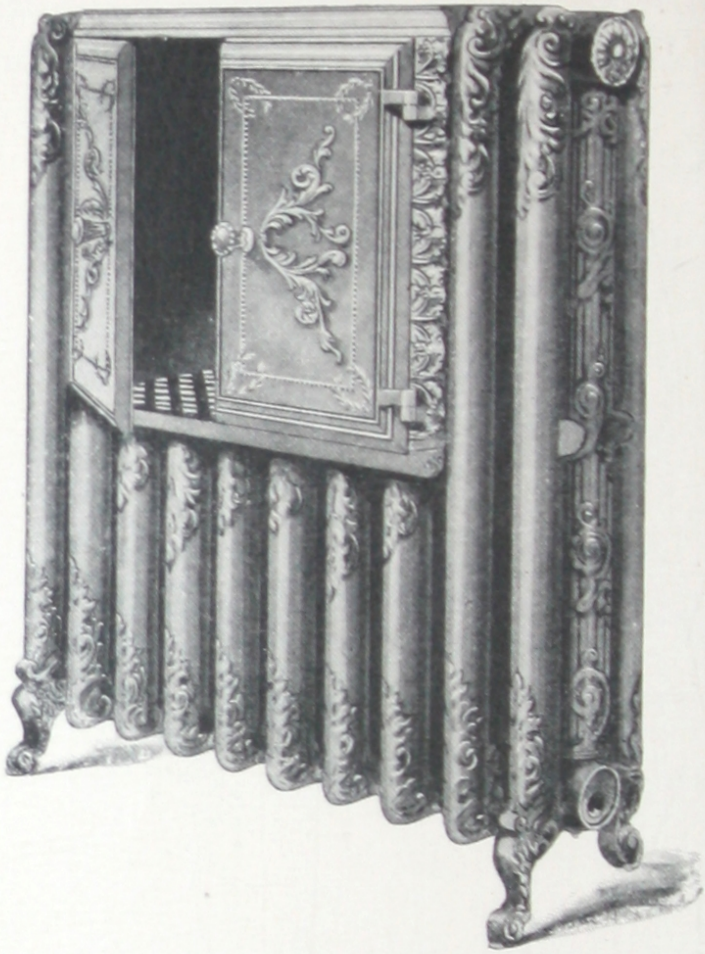
Extension Legs to order for other patterns.

Diadem and Coronet Radiators can be made without Legs, and Brackets furnished to attach to wall.

IMPERIAL UNION

FOR DINING ROOM

STEAM—WATER



Six 19″ Sections support Oven, which is 19½ in. long. inside length 18¼″; height 17″; depth 11″ outside width 12⅜″.

Four 37″ Sections two on each side of oven,

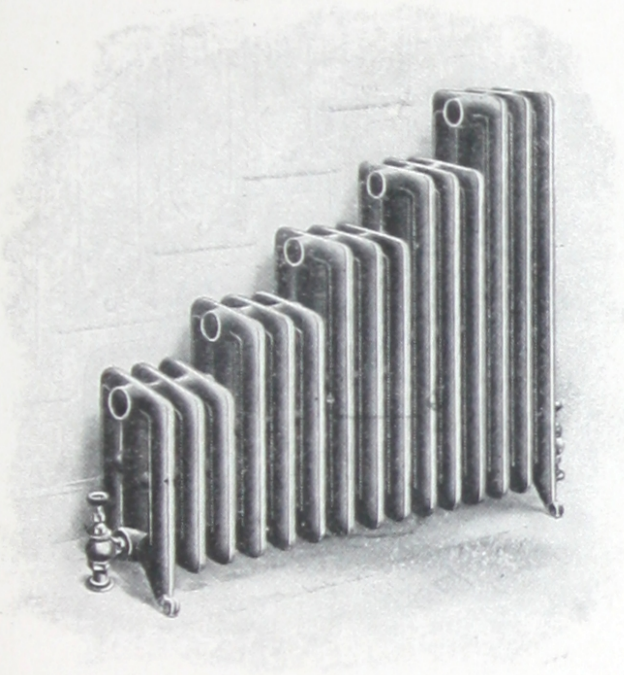
No.	length of Sections, 13″	Price 37″	45″
2.	Ten Sections of Radiator. Surface, 47′, length of Radiator, 32½″ . .	$55 00	$60 00
3.	Twelve Sections of Radiator. Surface, 60′, length of Radiator, 39″ .	60 00	66 00
4.	Fourteen Sections of Radiator. Surface, 73′, length of Radiator, 45½″	65 00	72 00
5.	Sixteen Sections of Radiator. Surface, 86′, length of Radiator, 52″ .	70 00	78 00
6.	Eighteen Sections of Radiator. Surface, 99′, length of Radiator, 58½″	75 00	84 00
7.	Twenty Sections of Radiator. Surface, 112′, length of Radiator, 65″	80 00	90 00
8.	Twenty-two Sections of Radiator, Surface, 126′, length of Radiator, 71½″	85 00	96 00

Regular Tapping see pages 75 and 77.

PRINCESS UNION

FOR STAIRWAYS

STEAM—WATER



All styles shown on pages 63, 64, 70, made to order, in their respective heights, sections of irregular heights being connected together.

Regular tapping, page 75.

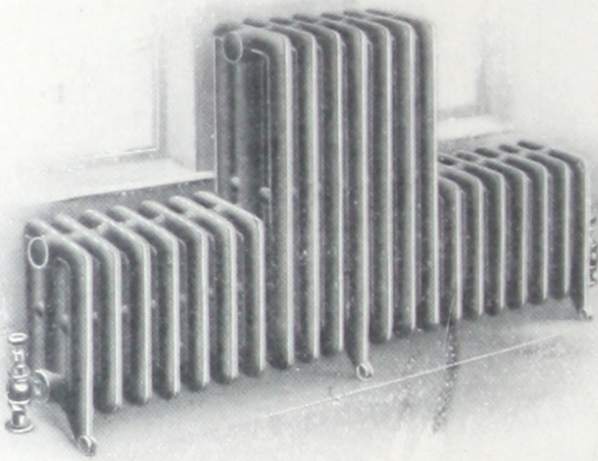
Distance floor to centre, page 77.

PRINCESS UNION

FOR WINDOWS ADJOINING

WITH WALL SPACE BETWEEN

STEAM



All styles shown on pages 63, 64, 70, made to order as illustrated.

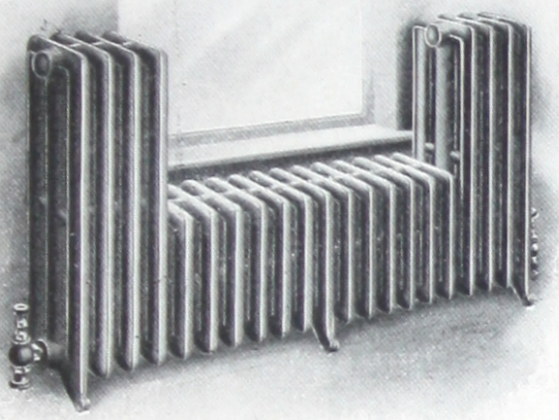
Regular tapping, page 75.

Distance floor to centre, page 77.

PRINCESS UNION

FOR LOW WINDOWS

STEAM



All styles shown on pages 63, 64, 70 made to order as illustrated.

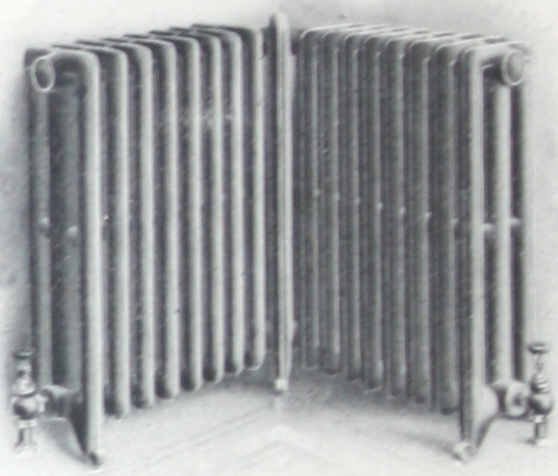
Regular tapping, page 75.

Distance floor to centre, page 77.

PRINCESS UNION

FOR CORNER SPACES

STEAM—WATER



All styles shown on pages 63, 64, 70, made to order as illustrated.

In ordering give exact angle at Base-board (or of any projection) which the radiator must clear.

Show by sketch the feed and return ends.

Regular tapping, page 75.

Distance floor to centre, page 77.

PRINCESS UNION

FOR BAY WINDOWS (ANGLE)

STEAM—WATER

All styles shown on pages 63, 64, 70, made to order as illustrated.

In ordering give exact angle at Base-board (or of any projection) which the radiator must clear.

Show by sketch the feed and return ends.

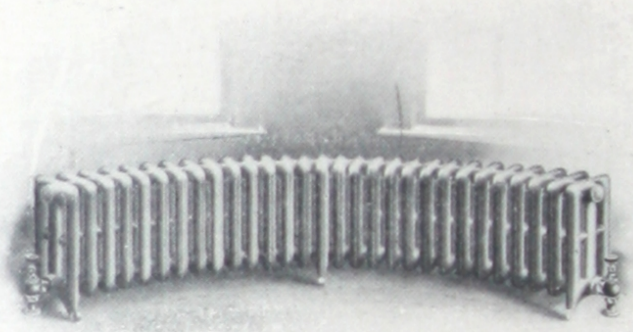
Regular tapping, page 75.

Distance floor to centre, page 77.

PRINCESS UNION

FOR BAY WINDOWS, (CURVED)

STEAM—WATER



All styles shown on pages 63, 64, 70, made to order as illustrated.

In ordering give radius at Base-board, or give measurements between the three points of an isosceles triangle within radius of Base-board.

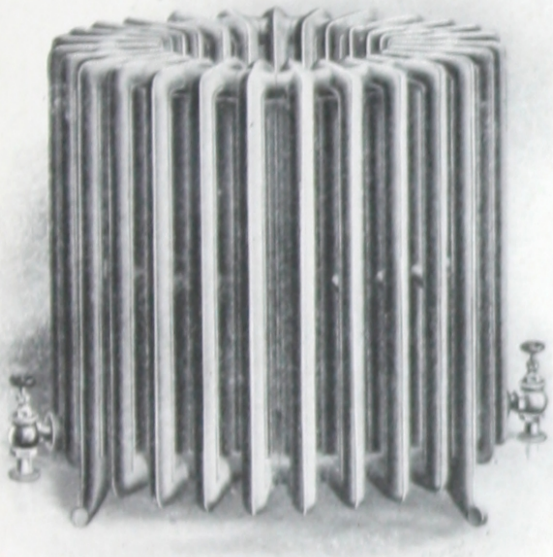
Regular tapping, page 75.

Distance floor to centre, page 77.

CIRCULAR IMPERIAL-PRINCESS

STEAM—WATER

(PRINCESS)



Dimensions, page 87.

Regular tapping, page 75.

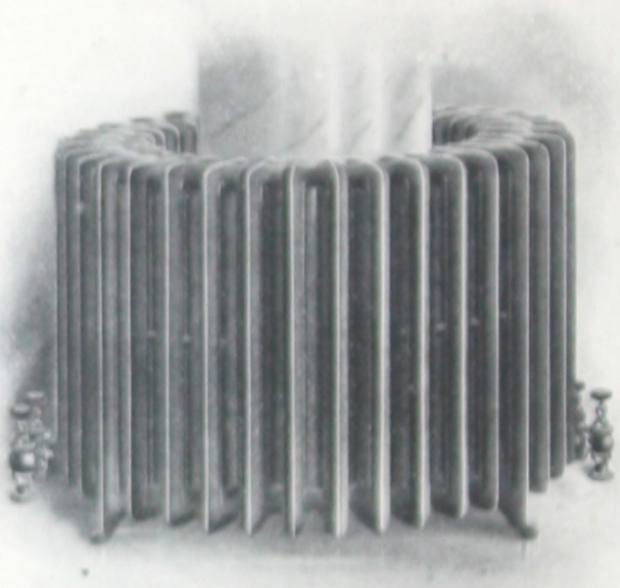
Distance floor to centre, page 77.

IMPERIAL-PRINCESS

TO ENCIRCLE COLUMN

STEAM—WATER

(PRINCESS)



Dimensions, page 87.

Regular tapping, page 75.

Distance floor to centre, page 77.

CIRCULAR
IMPERIAL—PRINCESS

DIAMETER MEASUREMENTS

(HEIGHTS, 45″, 37″, 31″, 25″, 19″)

SQ. FT. PER SECTION, 8, 6½, 5½, 4½, 3½.

IMPERIAL

No. of Sections	Center to Center of Opposite Sections	Extreme Outside Measurements	Inside Measurements to Encircle Column
	Inches	Inches	Inches
9	13½	24½	4½
12	16	27	7
15	18	29	9
18	19½	30½	10½
20	21¾	32¾	12¾
24	24¼	35¼	15¼
30	29¼	40¼	20¼
36	33¼	44¼	24¼
40	36½	47½	27½
45	40¼	51¼	31¼

PRINCESS

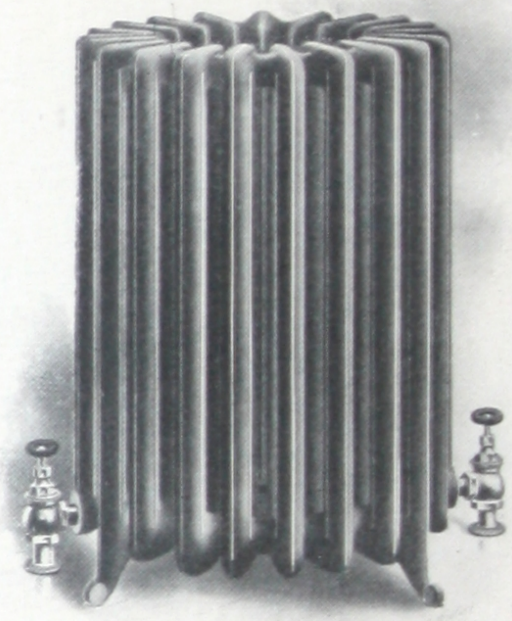
No. of Sections	Center to Center of Opposite Sections	Extreme Outside Measurements	Inside Measurements to Encircle Column
	Inches	Inches	Inches
9	12¼	23¼	3¼
12	14	25	5
15	16	27	7
18	17¾	28¾	8
20	19	30	10
24	21	32	12
30	25	36	16
36	28¾	39¾	19¾
40	32	43	23
45	34	45	25

Regular tapping will be two-pipe for Steam.
For tapping directions, page 75.
Distance floor to center, page 77.

CIRCULAR CORONET—DIADEM

STEAM—WATER

(DIADEM)



Dimensions, page 89.

Regular tapping, page 76.

Distance floor to centre, page 77.

For illustration Coronet, see pages 65–67

CORONET—DIADEM

CIRCULAR RADIATORS

DIMENSIONS

Height of Coronet,		**37″,**	**31″,**	**25″,**	**19″.**
Height of Diadem,	**45″,**	**37″,**	**31″,**	**25″,**	**19″.**
Sq. ft. per Section,	**4½,**	**3½,**	**3,**	**2½,**	**2.**

DIAMETER MEASUREMENTS

No. of Sections	Center to Center of Opposite Sections	Extreme Outside Measurement	Inside Measurement to Encircle Column
9	12½″	18¾″	6¼″
12	13½″	20¾″	8¼″
15	15½″	22¾″	10¼″
18	17½″	24¾″	12¼″
20	18½″	25¾″	13¼″
24	20¾″	28″	15½″
30	95½″	32¾″	20¼″
36	28″	35¼″	22¾″
40	32″	39¼″	26¾″
45	36″	43¾″	30¾″

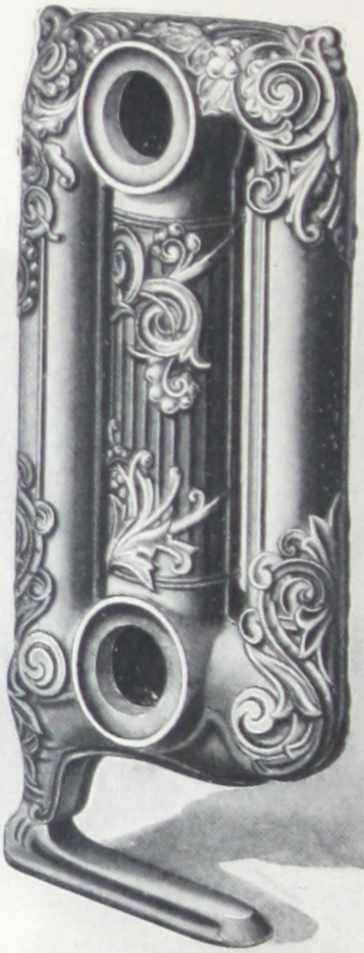
Regular tapping will be two-pipe for steam.

For tapping directions, page 76.

Distance floor to center, page 77.

CARPET FOOT

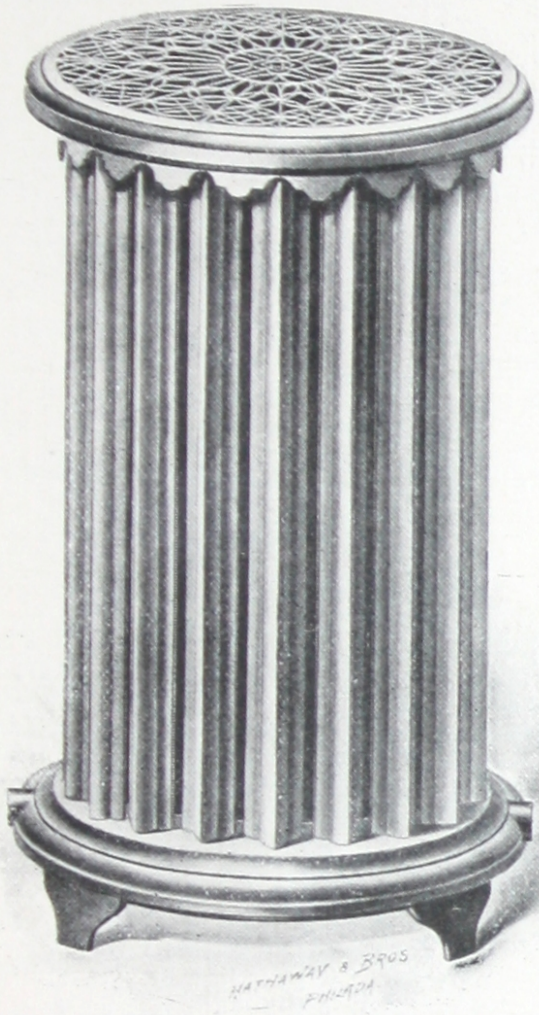
IMPERIAL



Carpet conceals the foot of Radiator.

REED CIRCULAR RADIATOR

FOR STEAM



Number of Columns	Outside Diam. of Base	Column Encircled Diam.	In halves to encircle column		Base made of one-piece	
			36″ High Surface	30″ High Surface	36″ High Surface	30″ High Surface
24	21″	. .	. . .	. . .	48′	36′
36	24″	. .	. . .	. . .	72′	54′
48	31″	11″	96′	72′	96′	72′
60	36″	16″	120′	90′	120′	90′
68	40″	20″	136′	102′	136′	102′

Reed Rectangular Radiator

WITH BASE MADE IN ONE CASTING

Height from floor	44″	36″	30″	24″	20″
Number of Double Columns	3 to 31	3 to 31	3 to 31	3 to 31	3 to 31
Surface Sq. Ft. in each Double Column	5′	4′	3′	2½′	2′
Number of Single Columns		4 to 24	4 to 24	4 to 24	4 to 24
Surface Sq. Ft. in each Single Column		2′	1½′	1¼′	1′

Width of Base, Double Column Radiator, 12″
" " " Single " " 7½″

Regular Tapping Steam, see page 70.
Supply and Return Tapped same end if desired.

Marble Tops

FOR C. I. FRAME
LIGHT OR DARK KNOXVILLE
UNION O. B. REED CIRCULAR

No. of Sections	⅞ in. thick Price	1¼ in. thick Price	Columns No. of	Columns Diam. of	1¼ in. thick Price
3	$1 49	$1 79			
4	1 85	2 21	24	21 in.	$8 80
5	2 18	2 61			
6	2 52	3 03			
7	2 86	3 44			
8	3 22	3 85	36	24 in.	$11 25
9	3 56	4 26			
10	3 90	4 68			
11	4 24	5 09			
12	4 59	5 51	48	31 in.	$16 50
13	4 92	5 91			
14	5 28	6 33			
15	5 63	6 74			
16	5 93	7 16	60	36 in.	$22 75
17	6 30	7 56			
18	6 65	7 98			
19	6 99	8 39			
20	7 34	8 81	68	40 in.	$28 50

ROYAL, IMPERIAL, PRINCESS, CORONET, AND DIADEM RADIATORS

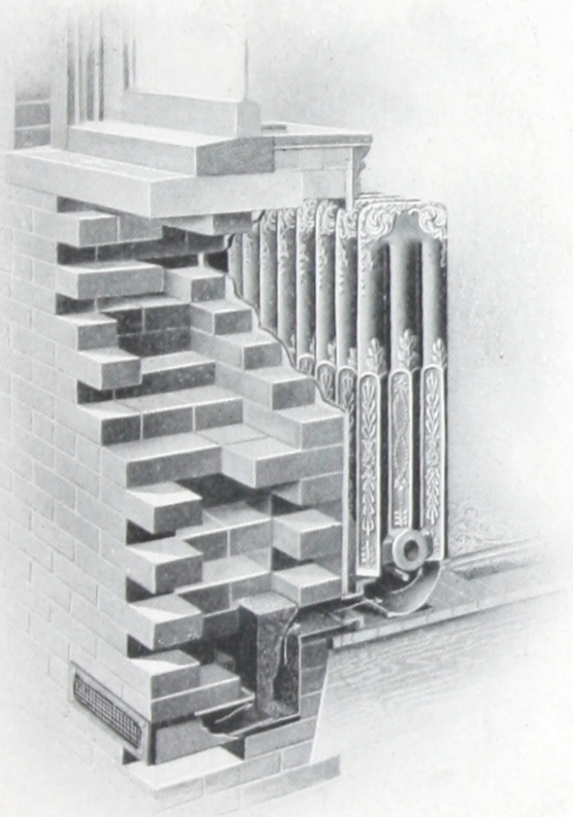
Are furnished with marble tops to order. These are held in position by a threaded screw inserted in top of radiator at each end. Price for tops given on application.

SEMI-DIRECT BASE

DETACHED

For Semi-Direct Warming and Ventilating
Air Inlet above the Floor

Arranged Also to Admit Air on
Line with Floor

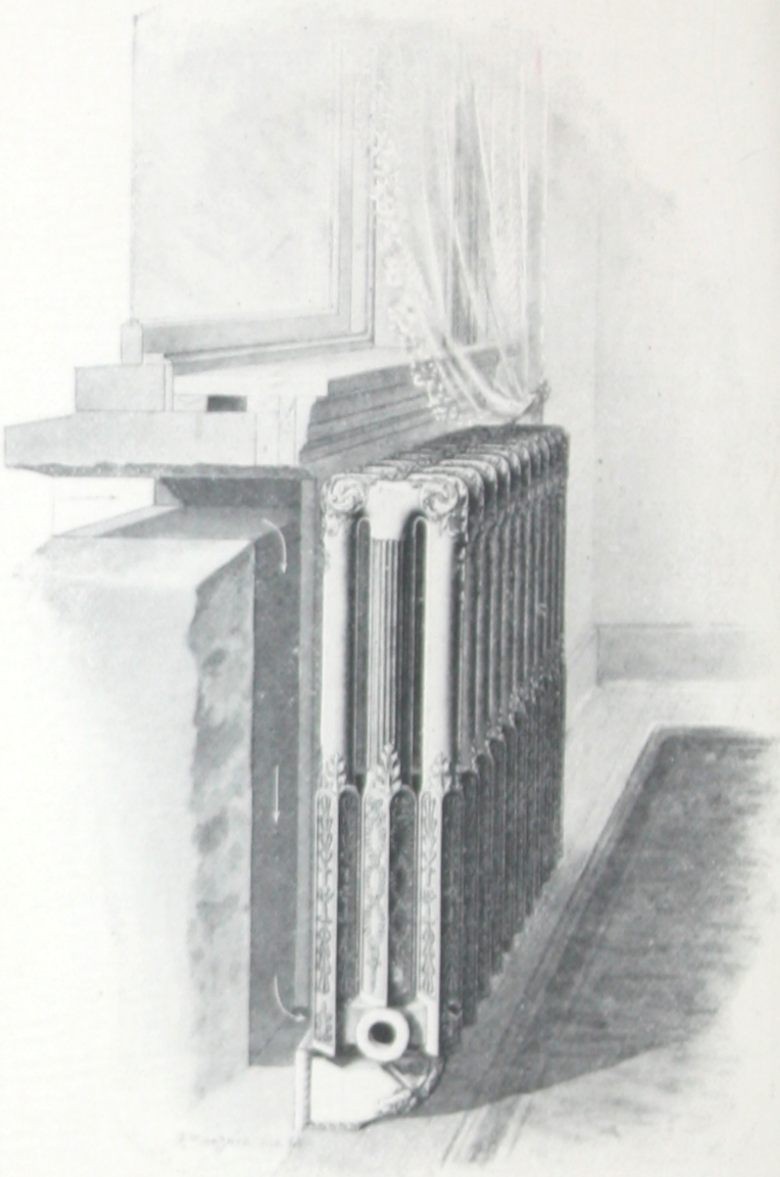


Damper can be set to admit outside air and air from room separately or at same time and in varying quantities.

SEMI-DIRECT BASE

SANITAS

FOR SEMI-DIRECT WARMING AND VENTILATING
AIR INLET UNDER WINDOW



Sanitas Base is full length of radiator and is attached to wall by expansion bolts.

Damper can be set to admit outside air and air from room separately, or at the same time.

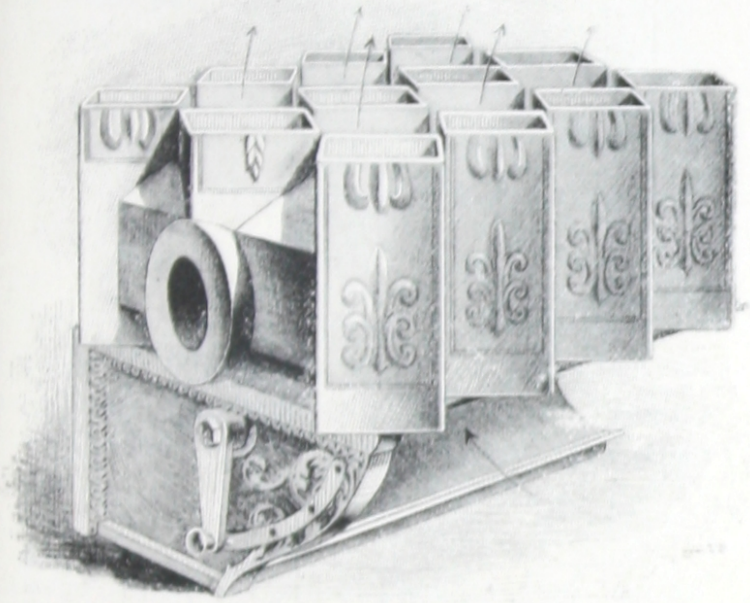
SEMI-DIRECT BASE

SANITAS

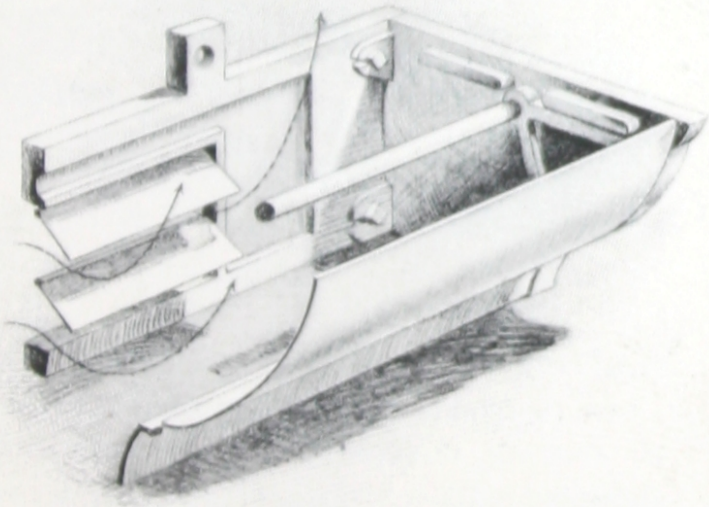
WITH CONTROLLING DAMPER

ARROWS INDICATE AIR CIRCULATION

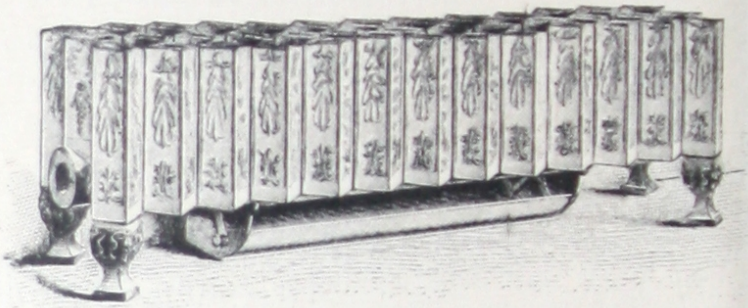
Base, one section less than full length of radiator. Damper closed at rear; air from room is being reheated and circulated.



Damper open at rear to admit outside air.



SEMI-DIRECT DETACHED BASE

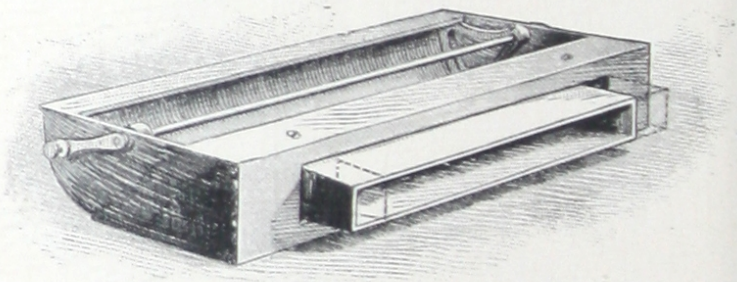


Base in position.

Radiators of 21 sections and longer have centre legs. When centre leg is used, base with damper cannot extend full length of radiator. Base with damper can be placed each side of centre leg.

Rear of base, air **inlet in back.** Damper open to admit outside air.

This is regular pattern.



Base (special to order) is arranged to control the air entering **through openings in floor** directly under the radiator.

SEMI-DIRECT DETACHED BASE FOR SOVEREIGN RADIATORS

"A" Length of base.
"B" Length of air inlet or thimble.
"C" Height of air inlet or thimble. (2 inches).
"D" Length of base in number of sections.
"E" Length of back outlet to receive thimble.
"G" Height of back outlet to receive thimble (2½ inches).

Total Number of Sections in Radiator	Number of Center Sections in Radiator "D"	"A"	"B"	"E"
6	4	9½"	6⅞"	7½"
7	5	1′ 1½"	6⅞"	8 9/16"
8	6	1′ 4"	9 13/32"	10½"
9	7	1′ 6⅝"	11⅞"	1′ 1⅜"
10	8	1′ 9 3/16"	1′ 2 5/32"	1′ 3 11/16"
11	9	2′ 3/16"	1′ 4 15/16"	1′ 6 13/16"
12	10	2′ 2 15/16"	1′ 7 27/32"	1′ 9 1/16"
13	11	2′ 5½"	1′ 9 29/32"	1′ 11⅝"
14	12	2′ 7⅞"	2′ 1"	2′ 2 5/16"
15	13	2′ 10⅞"	2′ 3 9/32"	2′ 2 7/16"
16	14	3′ 1¼"		2′ 7 13/16"
17	15	3′ 4"	2′ 8 21/32"	2′ 10 11/16"
18	16	3′ 7 1/16"		3′ 1⅜"
19	17	3′ 9⅜"	3′ 1 11/32"	3′ 3 11/16"
20	18	4′ ⅜"	2′ 11¾"	3′ 5/16"

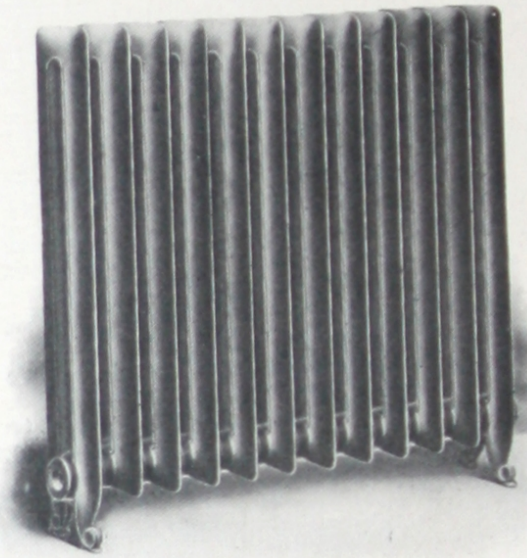
With Damper Handle operated at the side, the length of Base must be one section less than space between legs.

With Damper Handle in front the Base may be full length if desired.

Order must specify length of Base required.

SCEPTER

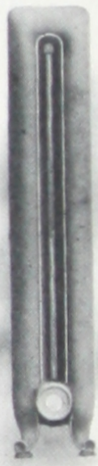
FOR STEAM



Extreme width 7 ″

Length at Base, 2⅜″

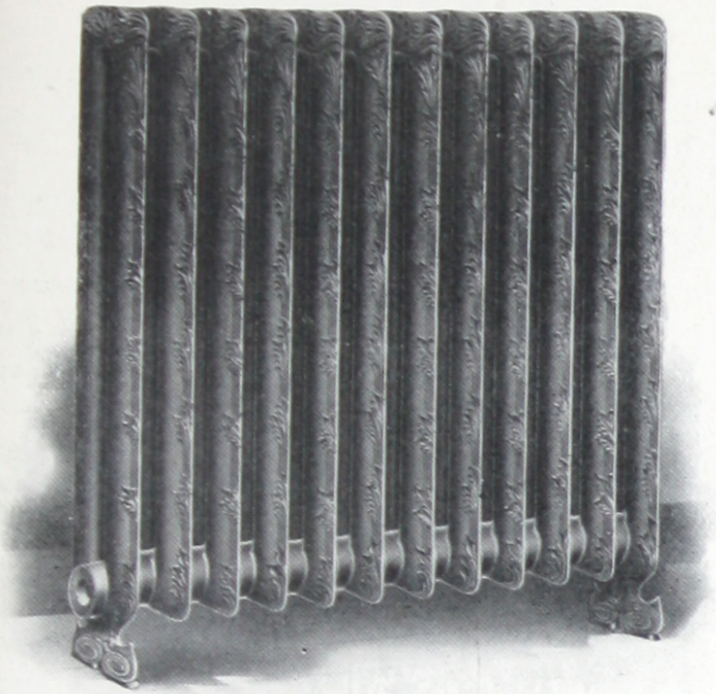
Floor to center of tapping, 5 ″



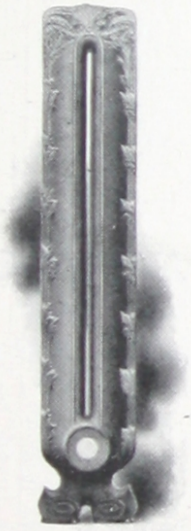
Forms of construction shown on pages 79, 80, 81, 82, 83, 84, 85, 86, 87, 88 made to order.

TIARA

FOR STEAM



Extreme width, 7″.
Length at base, 2⅜″.
Floor to center of tappings, 5 ″.



Heights and heating surface, page 100.
Tapping directions and measurements, page 100.
Circular Radiator dimensions, page 101.

SCEPTER AND TIARA

FOR STEAM

No. of Sections	Total Length	Radiating Surface 44″ Ft.	38″ Ft.	30″ Ft.	24″ Ft	18 Ft.
2	0 ft. 4¾ in.	9½	8	6	4⅔	3⅓
3	0 " 7⅛ "	14¼	12	9	7	5
4	0 " 9½ "	19	16	12	9⅓	6⅔
5	0 " 11⅞ "	23¾	20	15	11⅔	8⅓
6	1 " 2¼ "	28½	24	18	14	10
7	1 " 4⅝ "	33¼	28	21	16⅓	11⅔
8	1 " 7 "	38	32	24	18⅔	13⅓
9	1 " 9⅜ "	42¾	36	27	21	15
10	1 " 11¾ "	47½	40	30	23⅓	16⅔
11	2 " 2⅛ "	52¼	44	33	25⅔	18⅓
12	2 " 4½ "	57	48	36	28	20
13	2 " 6⅞ "	61¾	52	39	30⅓	21⅔
14	2 " 9¼ "	66½	56	42	32⅔	23⅓
15	2 " 11⅝ "	71¼	60	45	35	25
16	3 " 2 "	76	64	48	37⅓	26⅔
17	3 " 4⅜ "	80¾	68	51	39⅔	28⅓
18	3 " 6¾ "	85½	72	54	42	30
19	3 " 9⅛ "	90¼	76	57	44⅓	31⅔
20	3 " 11½ "	95	80	60	46⅔	33⅓
21	4 " 1⅞ "	99¾	84	63	49	35
22	4 " 4¼ "	104½	88	66	51⅓	36⅔
23	4 " 6⅝ "	109¼	92	69	53⅔	38⅓
24	4 " 9 "	114	96	72	56	40
25	4 " 11⅜ "	118¾	100	75	58⅓	41⅔
26	5 " 1¾ "	123½	104	78	60⅔	43⅓
27	5 " 4⅛ "	128¼	108	81	63	45
28	5 " 6½ "	133	112	84	65⅓	46⅔
29	5 " 8⅞ "	137¾	116	87	67⅔	48⅓
30	5 " 11¼ "	142½	120	90	70	50

TAPPING

REGULAR

TWO PIPE { 50 feet and less 1″ x ¾″
over 50 feet 1¼″ x 1″

ONE PIPE { 30 feet and less 1″
over 30 feet 1¼″
over 60 feet 1½″

Distance, floor to center of tapping 5 ″

Radiators will be tapped for two pipe connections unless otherwise specified.

Circular Radiator Dimensions, page 101.

SCEPTER AND TIARA CIRCULAR RADIATORS

HEIGHTS, ...	44″	38″	30″	24″	18″
SQ. FEET PER SECTION	4¾′	4′	3′	2⅓′	1⅔′

DIAMETER MEASUREMENTS

Number of Sections	Center to Center of Opposite Section	Extreme Outside Measurement	Inside Measurement to Encircle Column	SQUARE FEET SURFACE				
				44″	38″	30″	24″	18″
12	9¼	16½	2¼	57	48	36	28	20
14	10⅜	17⅜	3⅜	66½	56	42	33⅔	23⅛
16	12	19	5	76	64	48	37⅓	26⅔
18	13⅔	20⅔	6⅔	85½	72	54	42	30
20	15¼	22¼	8¼	95	80	60	46⅔	33⅓
24	18¼	25¼	11¼	114	96	72	56	40
25	18⅞	25⅞	11⅞	118¾	100	75	58⅓	41⅔
26	19¼	26¼	12¼	123½	104	78	60⅔	43⅓
28	21¼	28¼	14¼	133	112	84	65⅓	46⅔
30	22⅓	29⅓	15⅓	142½	120	90	70	50
32	24⅓	31⅓	17⅓	152	128	96	74⅔	53⅓
33	25¼	32¼	18¼	156¾	132	99	77	55
34	25⅔	32⅔	18⅔	161½	136	102	79⅓	56⅔
36	27	34	20	171	144	108	84	58
38	28⅔	35⅔	21⅔	180½	152	114	88⅔	63⅓
40	30¼	37	23¼	190	160	120	93⅓	66⅔
44	33¼	40¼	26¼	209	176	132	95⅔	73⅓
50	37½	44½	30½	237½	200	150	116⅔	88⅓

Order must specify if required to encircle column.
Distance floor to center of opening, 5 ″.
Tapping directions, page 100.

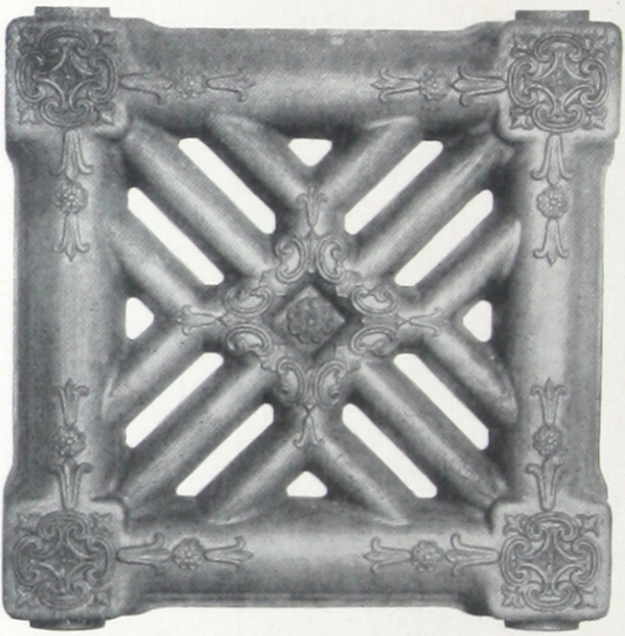
As made for stairways . . . . . see pp. 79
" " " windows . . . . . " " 80
" " " " . . . . . " " 81
" " " corner spaces . . . . . " " 82
" " " bay windows . . . . . " " 83
" " " " . . . . . " " 84
" " " circular " . . . . . " 85-88
" " to encircle columns . . . . . " 86

X-RAY
CORRIDOR RADIATOR

For use singly or tap connected as Radiators of any desired number of sections; the joints being made with right and left beveled threaded nipples bring the sections together **from the outside.** A thin steel wrench is used to connect them. This work can be quickly done by the ordinary steam fitter. No leakage can occur with joints connected in this manner.

The sections are tested to 100 lbs. hydrostatic pressure; but the form of sections is such that they will easily stand a pressure several times greater. **The X-Ray Radiators will give off more heat than radiators of greater width because of the facility afforded to the air to reach the interior surface and the increased action of radiant heat.**

No. 1



Sections are connected by 1½" heavy threaded octagon nipples and can easily be united or taken apart.

Length $14\frac{5}{16}$ inches. Width $14\frac{5}{16}$ inches.
Thickness $3\frac{1}{8}$ inches.

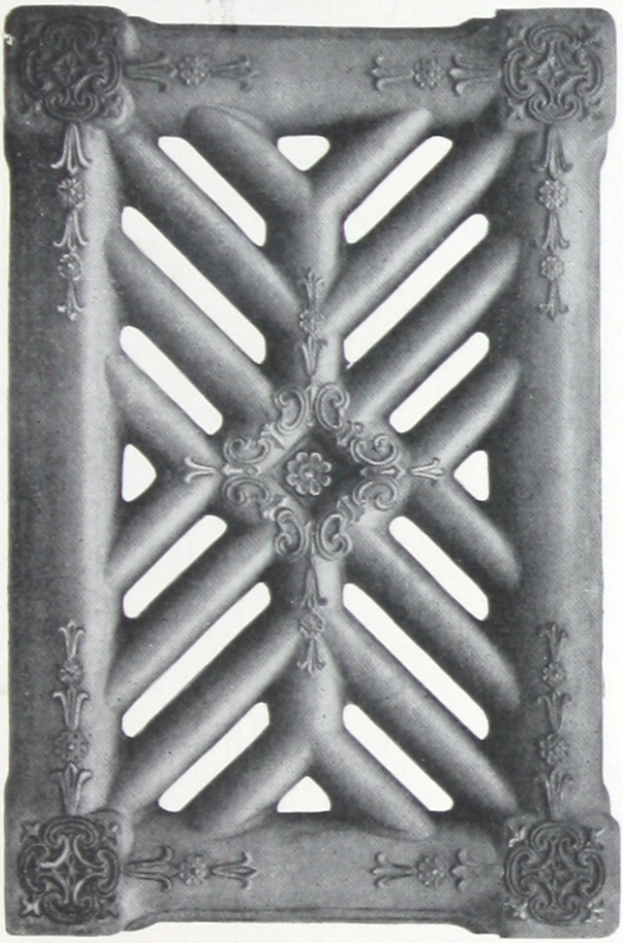
Space between sections when connected ¾ inch.
Space between radiator and wall, 1 inch.
Square feet surface 5.

X-RAY
CORRIDOR RADIATOR

The X-Ray Radiator removes the objections sometimes raised against the use of the ordinary direct wide pattern radiators because of the space occupied, these usually projecting into rooms and halls and encroaching upon the space that is indispensable for furniture and fixtures.

The X-Ray Radiator can be placed in narrow corridors, under windows, in corners and in inconspicuous places where they are almost unnoticed.

No. 2



Sections are **connected vertically** by 1½" heavy threaded octagon nipples and can easily be united or taken apart.

Length 21¾ inches. Width 14 5/16 inches.
Thickness 3⅛ inches.

Space between sections when connected, ¾ inch.

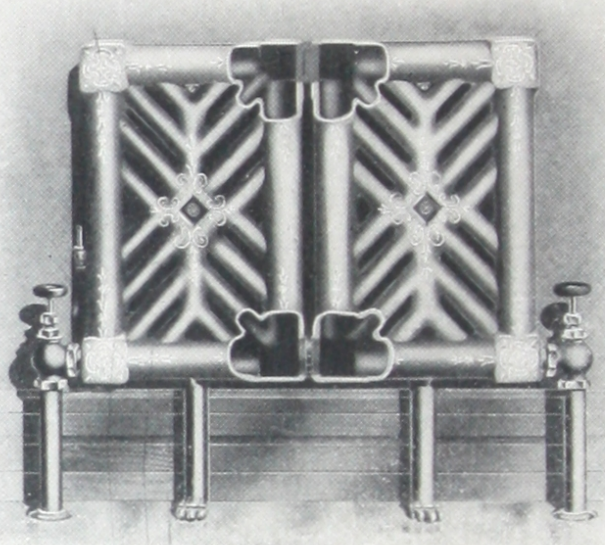
Space between radiator and wall, 1 inch.

Square feet surface, 8.

X-RAY
CORRIDOR RADIATOR

EIGHT FT. PATTERN

STEAM ONLY



VIEW SHOWING CIRCULATION FOR STEAM WITH PIPE CONNECTIONS AT BOTTOM, OPPOSITE ENDS

Horizontal length as connected, ... 29⅜″
Height " " . . . . . 21¼″

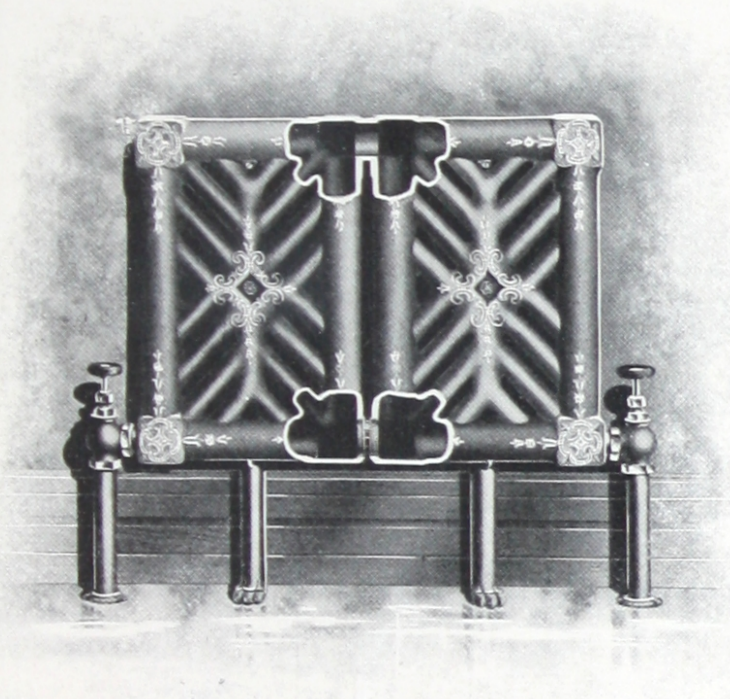
The steam radiators have **one connection only at bottom** between each section. The top is constructed to permit free expansion between each section of the connected radiator. Radiators can be made any desired length. Circulation is free.

Joints are of heavy screw nipples, connected from the outside; and warranted *to not leak.*

X-RAY
CORRIDOR RADIATOR

EIGHT FT. PATTERN

WATER



Horizontal length, as connected, 29⅜″.

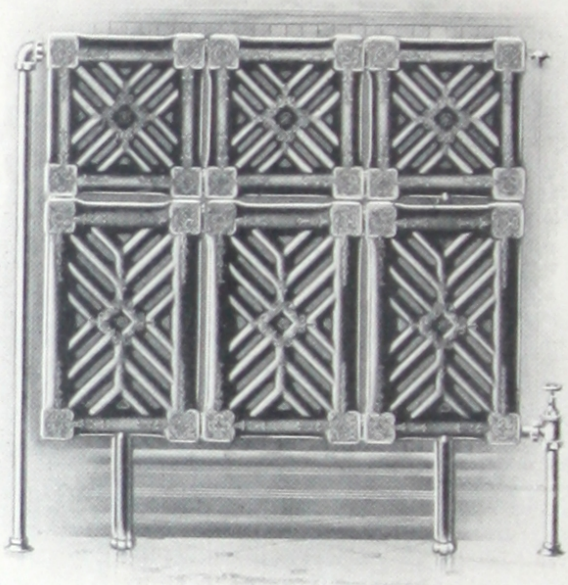
Height, as connected, 21¾″.

Joints are of heavy **screw octagon nipples,** connected from the outside, and warranted *to not leak.*

The water radiators have **top and bottom connections.**

X-RAY
CORRIDOR RADIATOR

WATER



Connected top and bottom opposite ends. Joints are of heavy screw octagon nipples warranted to not leak.

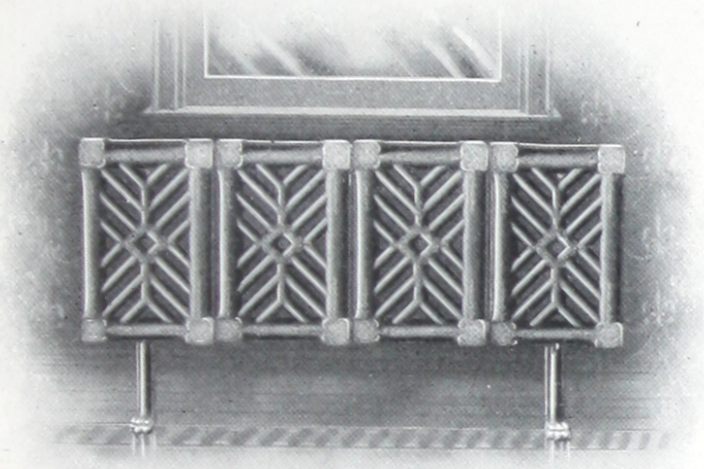
Horizontal length as connected $44\frac{7}{16}$".

Height as connected $36\frac{13}{16}$".

Combination arrangement of 8-ft. and 5-ft. sizes. Made any desired length.

X-RAY
CORRIDOR RADIATOR

STEAM—WATER



Joints are of heavy screw octagon nipples warranted to not leak.

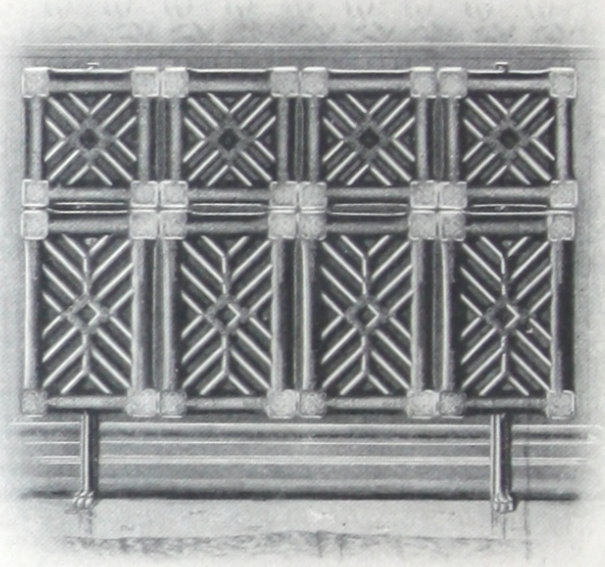
Horizontal length as connected, 59½″.

Height as connected, 21¾″.

Eight-ft. size—vertical.

X-RAY
CORRIDOR RADIATOR

STEAM—WATER



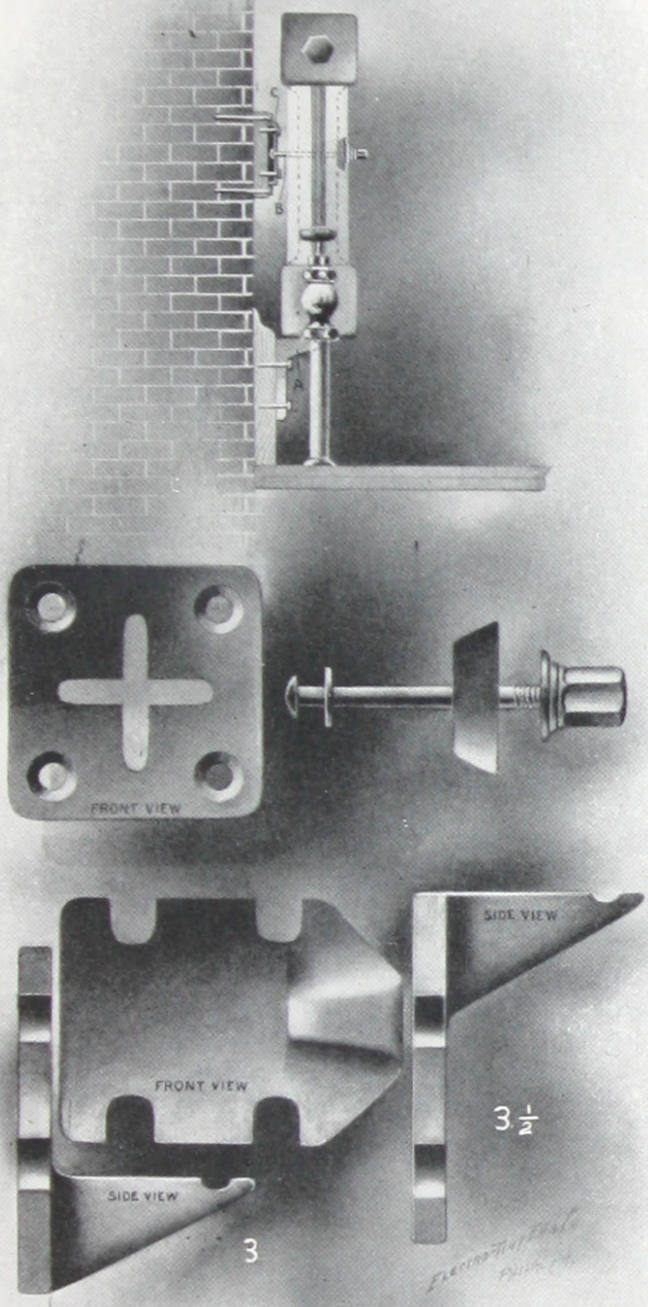
Joints are of heavy screw octagon nipples warranted to not leak.

Horizontal lengths as connected, 59½″.

Height as connected, $36\frac{13}{16}$″.

Combination arrangement of 8-ft. and 5-ft. sizes. Made any desired length.

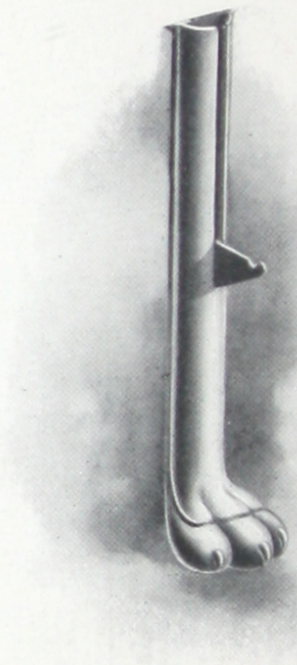
Brackets for X-Ray Radiators



X-RAY
CORRIDOR RADIATOR

ADJUSTABLE LEG SUPPORTS

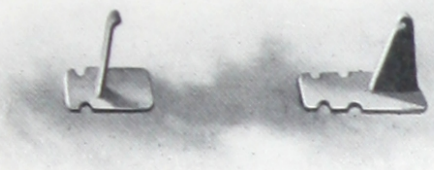
Radiator can be supported by this **adjustable leg** resting against surbase and wall. A plate holding a sliding bolt with nut is attached to wall and securely holds radiator in place and allows for expansion. The adjustable leg allows sections to be raised to any desired height and provides for errors in measurement or any change in piping.



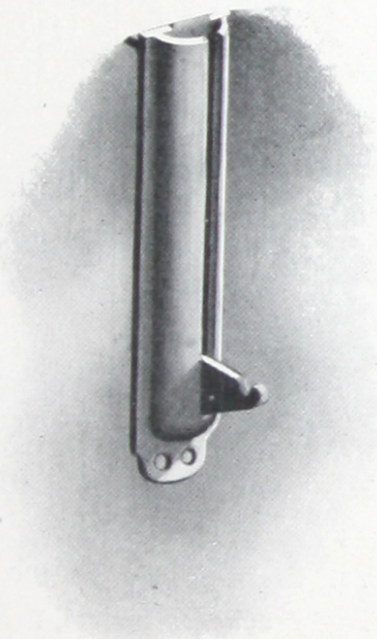
With the **adjustable leg** radiator can be placed in position more quickly and any inaccuracies in fitting easily adjusted.

Expansion does not displace the leg. The clamp opening permits bolts holding radiator in position to move freely to right or left, giving the necessary adjustment.

X-RAY
RADIATOR SUPPORTS

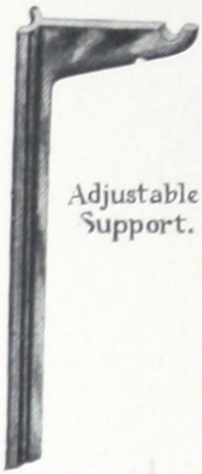


PLAIN BRACKETS TO BE SCREWED TO WALL



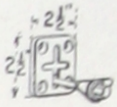
The adjustable leg without foot can be made to order.

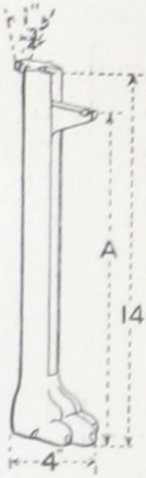
X-RAY
RADIATOR SUPPORTS



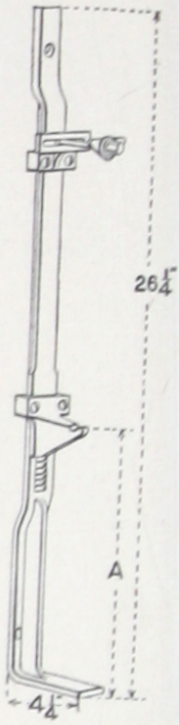
Adjustable Support.

No. 1





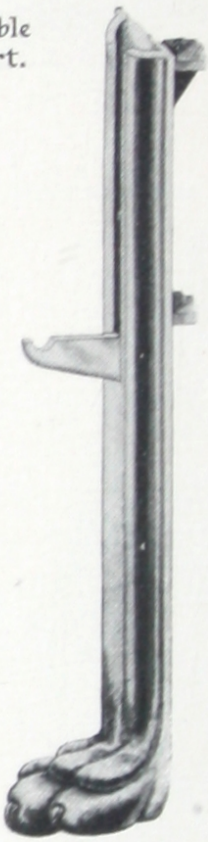
No. 1



No. 5

Plain foot Bracket.

No. 4



No. 1

No. 1. Adjustable Leg, full length.

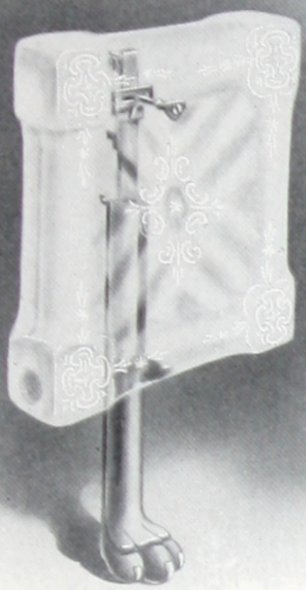
No. 2. Plain Foot, adjustable.

No. 3. Bracket Supports, Page 109.

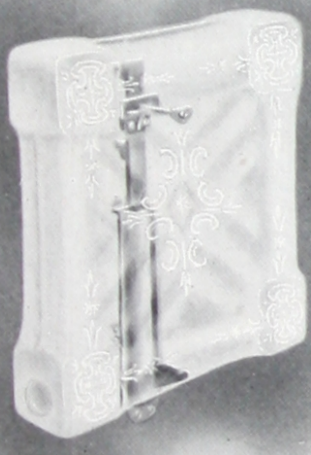
No. 4. Plain Foot, not adjustable.

No. 5. Special Adjustable Leg.

X-RAY



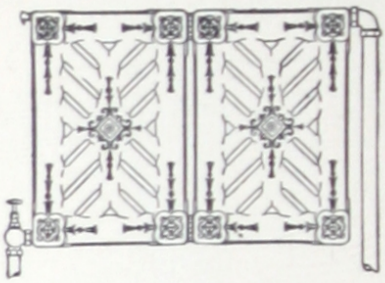
ADJUSTABLE LEG WITH CLAW FOOT



ADJUSTABLE WALL LEG

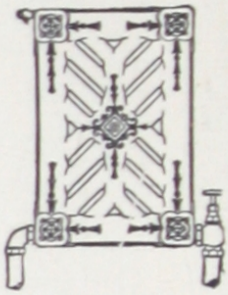
X-RAY

WATER



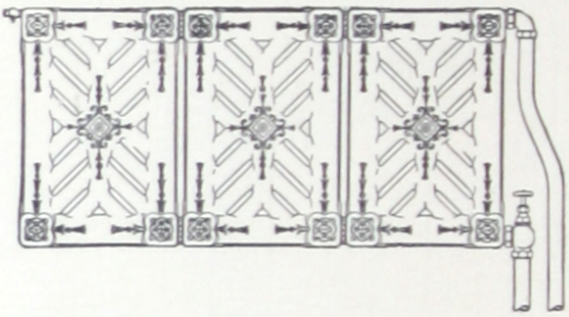
TOP AND BOTTOM
OPPOSITE ENDS

WATER



BOTTOM
OPPOSITE ENDS

WATER



TOP AND BOTTOM, SAME END

For measurements see page 116

Cen. to Cen.

A, B = $14\frac{5}{16}''$ E, J = $29\frac{3}{8}''$ C, D = $3\frac{1}{4}''$ N = $11\frac{5}{16}''$ R = $26\frac{3}{8}''$

For measurements see pages 117 and 118

Cen. to Cen.

A, B = $14\frac{5}{16}''$ E = $29\frac{3}{8}''$ H = $21\frac{3}{4}''$ S = $33\frac{13}{16}''$

M = $1\frac{1}{2}''$ C, D = $3\frac{1}{4}''$ R = $36\frac{13}{16}''$

For measurements see pages 116 and 118

Cen. to Cen.

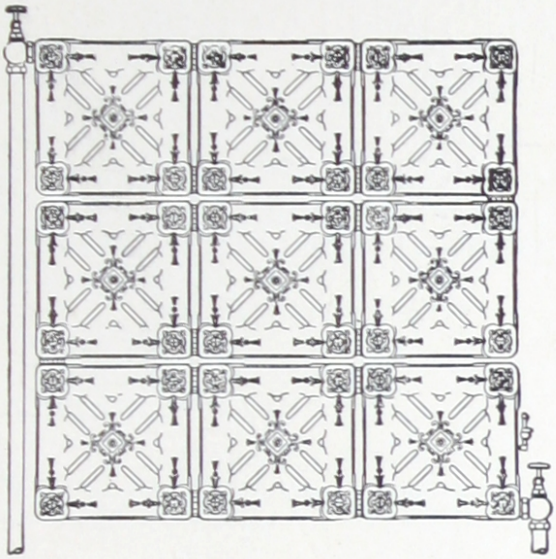
B = $14\frac{5}{16}''$ E = $29\frac{3}{8}''$ H = $21\frac{3}{4}''$ L = $41\frac{1}{4}''$

K = $44\frac{1}{4}''$ M = $1\frac{1}{2}''$ C, D = $3\frac{1}{4}''$ O = $18\frac{13}{16}''$

Connections $1\frac{1}{2}''$ Threaded Octagon Nipples

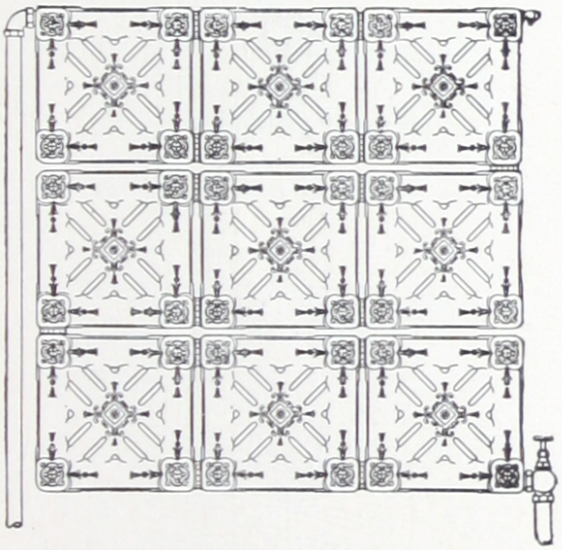
X-RAY

STEAM—TWO-PIPE



TAPPING TOP AND BOTTOM OPPOSITE ENDS

WATER

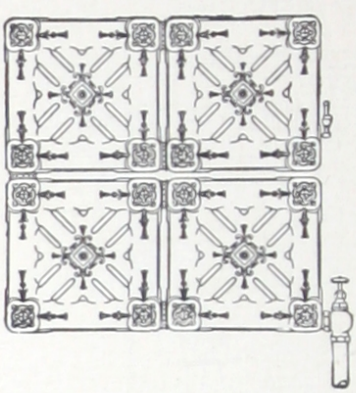


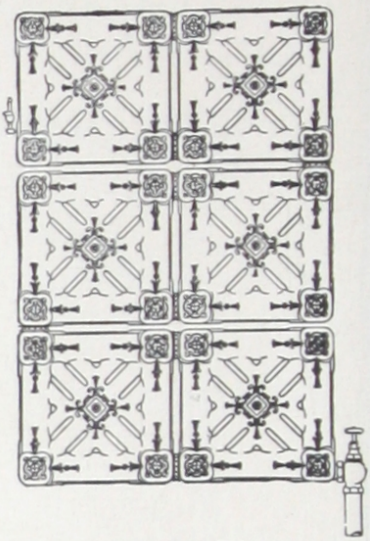
TAPPING TOP AND BOTTOM OPPOSITE ENDS

CONNECTING ONE HORIZONTAL UNIT (3 SECTIONS) WITH ANOTHER AT ONE END ONLY

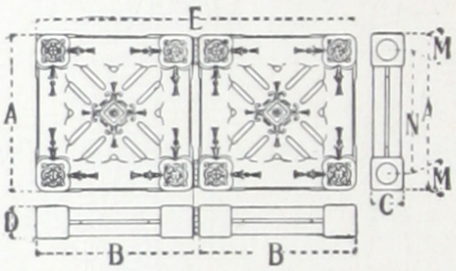
X-RAY

STEAM—ONE-PIPE

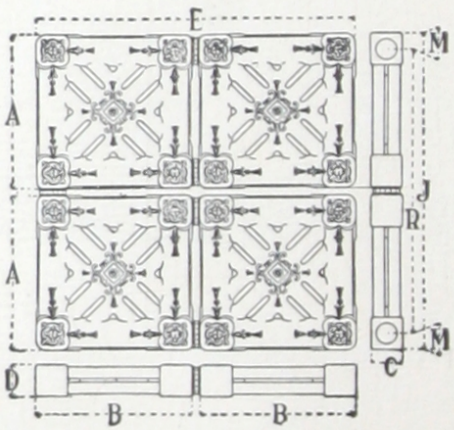




CONNECTING ONE HORIZONTAL UNIT WITH ANOTHER AT ONE END ONLY



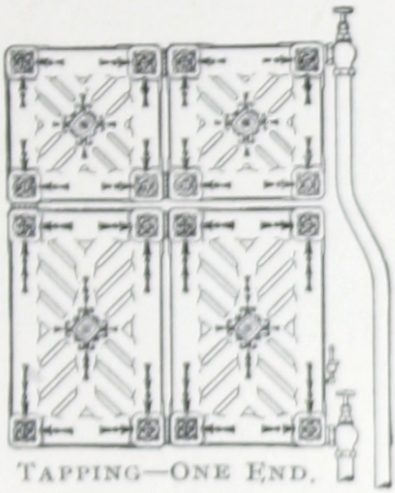
Measurements, page 114



Measurements, page 114

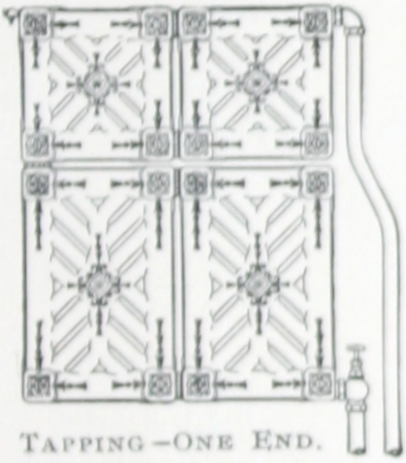
X-RAY

STEAM—TWO-PIPE

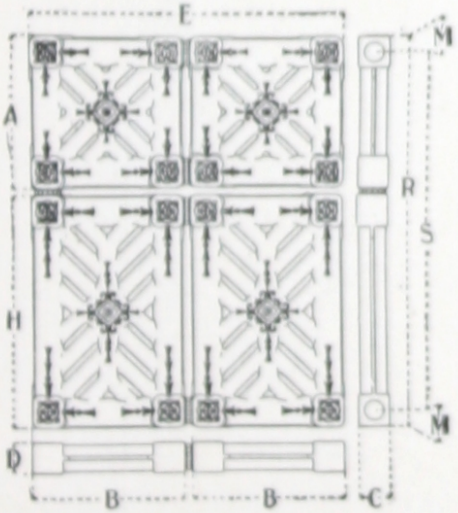


TAPPING—ONE END.

WATER



TAPPING—ONE END.

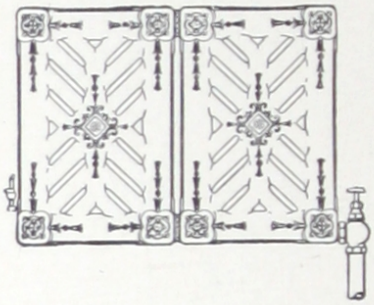


Measurements, page 114

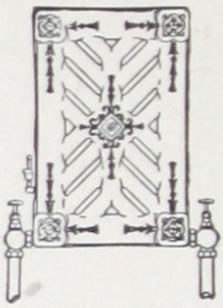
X-RAY

STEAM

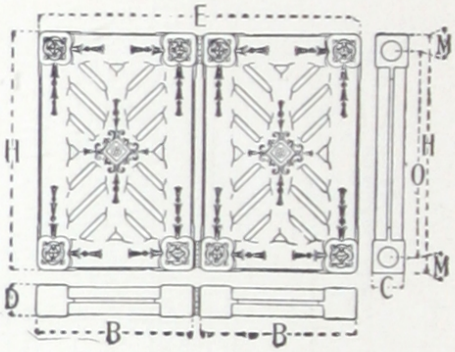
ONE-PIPE

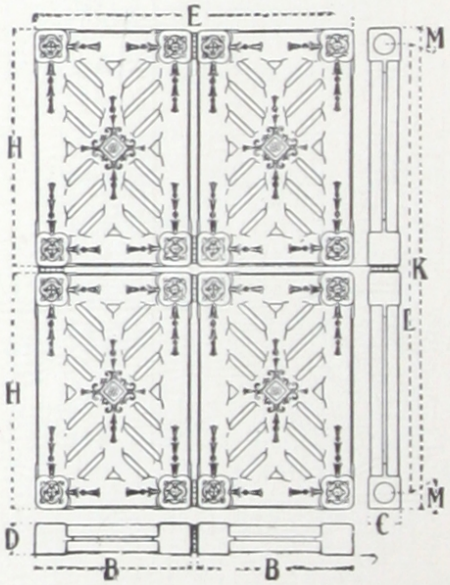


TWO-PIPE



TAPPING, BOTTOM
OPPOSITE ENDS





Measurements, page 114

X-RAY
STEAM RADIATORS

REGULAR TAPPINGS

TWO-PIPE WORK

See pages 115-116-117-118

All radiators of 50 square feet and less; 1 inch x ¾ inch R. H.

All radiators over 50 square feet but less than 120 square feet, 1¼ inch x 1 inch R. H.

All radiators of 120 square feet and over, 1½ inch x 1¼ inch R. H.

Air Valve, ⅛ inch R. H.

ONE-PIPE WORK

See page 111-113

All radiators of 30 square feet and less, 1 inch R. H.

All radiators over 30 square feet but less than 60 square feet, 1¼ inch R. H.

All radiators of 60 square feet, but less than 120 square feet, 1½ inch R. H.

All radiators of 120 square feet and over, 1½ inch R.H.

Air valve, ⅛ inch R. H.

Radiators will be tapped for **Two-Pipe Work** unless otherwise specified.

Steam Radiators of more than one section in length **cannot** be used for **Water Work.** (See page 104.)

X-RAY
WATER RADIATORS

REGULAR TAPPINGS

See pages 110-112-114

All radiators of 50 square feet and less, 1 inch x 1 inch R. H.

All radiators over 50 square feet but less than 120 square feet, 1¼ inch x 1¼ inch R. H.

All radiators of 120 square feet and over, 1½ inch x 1½ inch R. H. Air Valve, ⅛ inch R. H.

Water Radiators of more than one section in length **should not** be used for **Steam Work.** (See page 105.)

Radiators tapped 1¼ inch and less, will have eccentric bushings.

Radiators, unless specially ordered **are not assembled.**

Nipples and plugs are furnished for assembling.

8 foot sections longer than one section **are not** tapped to be **connected horizontally.** (See pp. 114.)

X-RAY RADIATORS

5 SQUARE FEET PER SECTION

Number of Sections		Square Feet per Section	Square Feet per Radiator	Height		Length	
Heigth	Length			Feet	Inches	Feet	Inches
1	x 1	5	**5**			1— 2	5-16
1	x 2	5	**10**			2— 5	3/8
1	x 3	5	**15**			3— 8	7-16
1	x 4	5	**20**	1	2 5-16	4—11	1/2
1	x 5	5	**25**			6— 2	9-16
1	x 6	5	**30**			7— 5	5/8
1	x 7	5	**35**			8— 8	11-16
1	x 8	5	**40**			9—11	3/4
2	x 1	5	**10**			1— 2	5-16
2	x 2	5	**20**			2— 5	3/8
2	x 3	5	**30**			3— 8	7-16
2	x 4	5	**40**	2	5 3/8	4—11	1/2
2	x 5	5	**50**			6— 2	9-16
2	x 6	5	**60**			7— 5	5/8
2	x 7	5	**70**			8— 8	11-16
2	x 8	5	**80**			9—11	3/4
3	x 1	5	**15**			1— 2	5-16
3	x 2	5	**30**			2— 5	3/8
3	x 3	5	**45**			3— 8	7-16
3	x 4	5	**60**			4—11	1/2
3	x 5	5	**75**	3	8 7-16	6— 2	9-16
3	x 6	5	**90**			7— 5	5/8
3	x 7	5	**105**			8— 8	11-16
3	x 8	5	**120**			9—11	3/4
4	x 1	5	**30**			1— 2	5-16
4	x 2	5	**40**			2— 5	3/8
4	x 3	5	**60**			3— 8	7-16
4	x 4	5	**80**	4	11 1/2	4—11	1/2
4	x 5	5	**100**			6— 2	9-16
4	x 6	5	**120**			7— 5	5/8
4	x 7	5	**140**			8— 8	11-16
4	x 8	5	**160**			9—11	3/4

X-RAY RADIATORS

5 SQUARE FEET PER SECTION

Number of Sections Height	Number of Sections Length	Square Feet per Section	Square Feet per Radiator	Height Feet	Height Inches	Length Feet	Length Inches
5	1	5	25	6	2 9-16	1	2 5-16
5	2	5	50			2	5 3/8
5	3	5	75			3	8 7-16
5	4	5	100			4	11 1/2
5	5	5	125			6	2 9-16
5	6	5	150			7	5 5/8
5	7	5	175			8	8 11-16
5	8	5	200			9	11 3/4
6	1	5	30	7	5 5/8	1	2 5-16
6	2	5	60			2	5 3/8
6	3	5	90			3	8 7-16
6	4	5	120			4	11 1/2
6	5	5	150			6	2 9-16
6	6	5	180			7	5 5/8
6	7	5	210			8	8 11-16
6	8	5	240			9	11 3/4
7	1	5	35	8	8 11-16	1	2 5-16
7	2	5	70			2	5 3/8
7	3	5	105			3	8 7-16
7	4	5	140			4	11 1/2
7	5	5	175			6	2 9-16
7	6	5	210			7	5 5/8
7	7	5	245			8	8 11-16
7	8	5	280			9	11 3/4
8	1	5	40	9	11 3/4	1	2 5-16
8	2	5	80			2	5 3/8
8	3	5	120			3	8 7-16
8	4	5	160			4	11 1/2
8	5	5	200			6	2 9-16
8	6	5	240			7	5 5/8
8	7	5	280			8	8 11-16
8	8	5	320			9	11 3/4

X-RAY RADIATORS

8 SQUARE FEET PER SECTION

Number of Sections Height	x	Length	Square Feet per Section	Square Feet per Radiator	Height Feet Inches	Length Feet Inches
1	x	1	8	8		1— 2 5-16
1	x	2	8	16		2— 5 3/8
1	x	3	8	24		3— 8 7-16
1	x	4	8	32	1—9¾	4—11 ½
1	x	5	8	40		6— 2 9-16
1	x	6	8	48		7— 5 5/8
1	x	7	8	56		8— 8 11 16
1	x	8	8	64		9—11 ¾
2	x	1	8	16		1— 2 5-16
2	x	2	8	32		2— 5 3/8
2	x	3	8	48		3— 8 7-16
2	x	4	8	64	3—8¼	4—11 ½
2	x	5	8	80		6— 2 9-16
2	x	6	8	96		7— 5 5/8
2	x	7	8	112		8— 8 11-16
2	x	8	8	128		9—11 ¾
3	x	1	8	24		1— 2 5-16
3	x	2	8	48		2— 5 3/8
3	x	3	8	72		3— 8 7-16
3	x	4	8	96	5—6¾	4—11 ½
3	x	5	8	120		6— 2 9-16
3	x	6	8	144		7— 5 5/8
3	x	7	8	168		8— 8 11-16
3	x	8	8	192		9—11 ¾
4	x	1	8	32		1— 2 5-16
4	x	2	8	64		2— 5 3/8
4	x	3	8	96		3— 8 7-16
4	x	4	8	128	7—5¼	4—11 ½
4	x	5	8	160		6— 2 9-16
4	x	6	8	192		7— 5 5/8
4	x	7	8	224		8 – 8 11-16
4	x	8	8	256		9—11 ¾

X-RAY RADIATORS

8 SQUARE FEET PER SECTION

Number of Sections		Square Feet per Section	Square Feet per Radiator	Height		Length	
Heigth	Length			Feet	Inches	Feet	Inches
5	1	8	40	9	3¼	1	2 5-16
5	2	8	80			2	5 ⅜
5	3	8	120			3	8 7-16
5	4	8	160			4	11 ½
5	5	8	200			6	2 9-16
5	6	8	240			7	5 ⅝
5	7	8	280			8	8 11-16
5	8	8	320			9	11 ¾
6	1	8	48	11	2¼	1	2 5-16
6	2	8	96			2	5 ⅜
6	3	8	144			3	8 7-16
6	4	8	192			4	11 ½
6	5	8	240			6	2 9-16
6	6	8	288			7	5 ⅝
6	7	8	336			8	8 11-16
6	8	8	384			9	11 ¾
7	1	8	56	13	¼	1	2 5-16
7	2	8	112			2	5 ⅜
7	3	8	168			3	8 7-16
7	4	8	224			4	11 ½
7	5	8	280			6	2 9-16
7	6	8	336			7	5 ⅝
7	7	8	392			8	8 11-16
7	8	8	448			9	11 ¾
8	1	8	64	14	11¼	1	2 5-16
8	2	8	128			2	5 ⅜
8	3	8	192			3	8 7-16
8	4	8	256			4	11 ½
8	5	8	320			6	2 9-16
8	6	8	384			7	5 ⅝
8	7	8	448			8	8 11-16
8	8	8	512			9	11 ¾